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Acting Agency Secretary

# California Regional Water Quality Control Board

## San Francisco Bay Region

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Arnold Schwarzenegger  
Governor

**ORDER NO. R2-2006-0031**

**NPDES NO. CA0038636**

The following Dischargers are authorized to discharge in accordance with the conditions set forth in this Order:

<b>Dischargers</b>	East Bay Regional Park District (EBRPD), Union Sanitary District (USD), and East Bay Dischargers Authority (EBDA)
<b>Name of Facility</b>	Hayward Shoreline Marsh, Hayward
<b>Facility Address</b>	3010 West Winton Road
	Hayward, CA 94544
	Alameda County

The Dischargers are authorized to discharge from the following discharge point as set forth below:

<b>Discharge Point</b>	<b>Effluent Description</b>	<b>Discharge Point Latitude</b>	<b>Discharge Point Longitude</b>	<b>Receiving Water</b>
E-3	POTW Effluent	37 ° , 37' , 32" N	122 ° , 07' , 50" W	Lower San Francisco Bay

This Order was adopted by the Regional Water Board on:	<b>May 10, 2006</b>
This Order shall become effective on:	<b>May 10, 2006</b>
This Order shall expire on:	<b>May 9, 2011</b>
The U.S. Environmental Protection Agency (U.S. EPA) and the Regional Water Board have classified this discharge as a minor discharge.	
The Dischargers shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of the Order expiration date as application for issuance of new waste discharge requirements.	

IT IS HEREBY ORDERED, that Order No. 99-024 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the California Water Code (CWC) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA), and regulations and guidelines adopted thereunder, the Dischargers shall comply with the requirements in this Order.

I, Bruce H. Wolfe, Executive Officer, do hereby certify the following is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on May 10, 2006.

Bruce H. Wolfe, Executive Officer



## CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD REGION 2, SAN FRANCISCO BAY REGION

ORDER NO. R2-2006-0031

NPDES NO. CA0038636

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Attachment G – The following documents are part of this Permit, but are not physically attached due to volume. They are available on the internet at

[www.waterboards.ca.gov/sanfranciscobay/](http://www.waterboards.ca.gov/sanfranciscobay/)

- Self-Monitoring Program, Part A, adopted August 1993
- Standard Provisions and Reporting Requirements, August 1993
- August 6, 2001 Staff Letter: *Requirement for Priority Pollutant Monitoring in Receiving Water and Wastewater Discharges*

## I. FACILITY INFORMATION

The following Dischargers are authorized to discharge in accordance with the conditions set forth in this Order:

**Table 1 Facility Information**

<b>Dischargers</b>	East Bay Regional Park District (EBRPD) Union Sanitary District (USD), and East Bay Dischargers Authority (EBDA)	
<b>Name of Facility</b>	Hayward Shoreline Marsh, Hayward	
<b>Facility Address</b>	3010 West Winton Road	
	Hayward, CA 94544	
	Alameda County	
<b>Facility Contact, Title, and Phone</b>	David Livingston, Manager, (510) 477-7560	
<b>Mailing Address</b>	5072 Benson Road Union City, CA 94587	
<b>Type of Facility</b>	POTW	
<b>Facility Design Flow</b>	Design Hydraulic Capacity – Marsh 20 mgd	Actual 2004 Average Discharge to Marsh (Jan – Dec) 3.09 mgd

## II. FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Regional Water Board), finds:

### A. Background

East Bay Dischargers Authority (EBDA), Union Sanitary District (USD), and East Bay Regional Park District (EBRPD) (hereinafter collectively called Dischargers) are currently discharging under Order No. 99-024 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0038636. The Dischargers submitted a Report of Waste Discharge, dated December 19, 2003, and applied for an NPDES permit reissuance to discharge reclaimed wastewater from the Alvarado Wastewater Treatment Plant to Hayward Marsh, also called the Facility, at Hayward Shoreline Regional Park, hereinafter Facility. The application was deemed complete on May 20, 2004.

### B. Facility Description

The Union Sanitary District (USD) owns and operates the Alvarado Wastewater Treatment Plant, which provides reclaimed wastewater through an EBDA pipeline to the Hayward Marsh system. The East Bay Regional Park District (EBRPD) owns and operates the Hayward Marsh. The Hayward Marsh is a 145-acre improved marsh system including three freshwater marsh basins (85 acres) and two brackish water basins (60 acres) at Hayward Shoreline Regional Park, adjacent to Lower San Francisco Bay. The three freshwater marsh basins (Basins 1, 2A, and 2B) are part of the treatment process and are not waters of the United States. The two brackish water basins (Basins 3A and 3B) are waters of the United States.

After mixing with Bay water in the brackish water basins, the reclaimed wastewater from the marsh system is discharged directly from Discharge Point E-3 (see table on cover page) through an earthen channel to the Lower San Francisco Bay, a water of the United States within the San Francisco Bay Watershed. Attachment B provides a location map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

**C. Legal Authorities**

This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as an NPDES permit for point source discharges from Hayward Marsh to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.

**D. Background and Rationale for Requirements**

The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and through special studies. Attachments A through G, which contain background information and rationale for Order requirements, are hereby incorporated into this Order and, thus, constitute part of the Findings for this Order.

**E. California Environmental Quality Act (CEQA)**

This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.

**F. Technology-based Effluent Limitations**

The Code of Federal Regulations (CFR) at 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards. This Order includes technology-based effluent limitations based on Secondary Treatment Standards at 40 CFR Part 133 and Best Professional Judgment (BPJ) in accordance with 40 CFR §125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

**G. Water Quality-based Effluent Limitations**

Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives (WQOs) have not been established, 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a) or proposed State criteria or a State policy interpreting narrative criteria. A detailed discussion of the water quality based effluent limitations is included in the Fact Sheet (Attachment F).

- 1. Constituents Identified in the 303(d) List.** On June 6, 2003, the USEPA approved a revised list of impaired water bodies prepared by the State (the 303(d) List). The State had prepared the 303(d) List pursuant to provisions of section 303(d) of the CWA requiring identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources.

The pollutants impairing Lower San Francisco Bay include chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, PCBs, dioxin-like PCBs, and selenium.

#### H. Water Quality Control Plans

The Regional Water Board adopted a Water Quality Control Plan for the San Francisco Bay Basin, *Water Quality Control Plan* (revised in 2005), (hereinafter Basin Plan) that designates beneficial uses, establishes WQOs, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Beneficial uses applicable to Lower San Francisco Bay are as follows:

**Table 2. Basin Plan Beneficial Uses of Lower San Francisco Bay**

Discharge Point	Receiving Water Name	Beneficial Use(s)
E-3	Lower San Francisco Bay	Industrial Service Supply (IND), Navigation (NAV), Water Contact Recreation (REC1), Non-contact Water Recreation (REC2), Ocean Commercial and Sport Fishing (COMM), Wildlife Habitat (WILD), Preservation of Rare and Endangered Species (RARE), Fish Migration (MIGR), Shellfish Harvesting (SHELL), Estuarine Habitat (EST)

Requirements of this Order implement the Basin Plan. The Basin Plan does not identify beneficial uses for Hayward Marsh, which is surrounded by moats and sloughs, and not contiguous with other wetlands. For small noncontiguous wetlands, the Basin Plan indicates that it will not be practical to delineate and specify beneficial uses for each one individually, and therefore, beneficial uses may be determined site-specifically, as needed. At this time, public access is restricted by a fence that surrounds nearly all of Hayward Marsh. The fenced areas also include signs that alert the public to the use of recycled wastewater. In other areas, the public would need to traverse sloughs and moats to reach areas that receive recycled wastewater. There is only one exception and that is the discharge channel from Hayward Marsh to the Bay. To address potential public access in this area, this Order requires the Dischargers to post additional signs. Since these restrictions effectively prevent public access to Hayward Marsh, this Order does not identify beneficial uses of Hayward Marsh as water contact recreation or shellfish harvesting. In order for the Regional Water Board to designate beneficial uses for Hayward Marsh through a future Basin Plan amendment, this Order requires the Dischargers to provide information that will enable the Regional Water Board to conduct a use attainability analysis.

#### I. National Toxics Rule (NTR) and California Toxics Rule (CTR)

USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995 and November 9, 1999, and the CTR on May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria (WQC) for priority pollutants and are applicable to this discharge.

#### J. State Implementation Policy

On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the

priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The State Water Board subsequently amended the SIP, and the amendments became effective on May 31, 2005. The SIP includes procedures for determining the need for and calculating WQBELs and requires dischargers to submit data sufficient to do so.

1. **Requirement for Additional Monitoring.** On August 6, 2001, Regional Water Board staff sent a letter to all permitted dischargers pursuant to Section 13267 of CWC requiring the submittal of effluent and receiving water data on priority pollutants, hereinafter referred to as the "August 6, 2001 Letter" (Attachment G). Pursuant to the August 6, 2001 Letter, the Dischargers collected and analyzed priority pollutants during the years 2002 through 2005. Details of these data and the rationale for the additional monitoring required in this Order are provided in the Fact Sheet (Attachment F).

#### **K. Compliance Schedules and Interim Requirements**

Section 2.1 of the SIP provides that, based on a discharger's request and demonstration that it is infeasible for an existing discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under Section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or May 18, 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement new or revised WQOs. This Order includes compliance schedules and interim effluent limitations. A detailed discussion of the basis for the compliance schedules and interim effluent limitations is included in the Fact Sheet (Attachment F).

#### **L. Antidegradation Policy**

Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16, which incorporates the requirements of federal antidegradation policy. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. As discussed in detail in the Fact Sheet (Attachment F), the permitted discharge is consistent with the antidegradation provision of 40 CFR §131.12 and State Water Board Resolution 68-16.



**M. Anti-Backsliding Requirements**

Sections 402(o) (2) and 303(d)(4) of the CWA and federal regulations at 40 CFR § 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Some effluent limitations in the previous Order have been removed. As discussed in detail in the Fact Sheet (Attachment F), this removal of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

**N. Monitoring and Reporting**

Section 122.48 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

**O. Standard and Special Provisions**

Standard Provisions, which in accordance with 40 CFR §§122.41 and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D. The Regional Water Board has also included in this Order special provisions applicable to the Dischargers (Attachment G). A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet (Attachment F).

**P. Notification of Interested Parties**

The Regional Water Board has notified the Dischargers and interested agencies and persons of its intent to prescribe Waste Discharge Requirements (WDRs) for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet (Attachment F) of this Order.

**Q. Consideration of Public Comment**

The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet (Attachment F) of this Order.

**III. DISCHARGE PROHIBITIONS**

- A. Discharge of reclaimed wastewater at a location or in a manner different from that described in Finding B is prohibited.
- B. Neither the treatment, nor the discharge of reclaimed wastewater nor the management of the Marsh shall create a nuisance as defined in Section 13050 (m) of the California Water Code.

#### IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

##### A. Effluent Limitations for E-1 (Basin 1 Inlet)

1. The discharge of reclaimed wastewater to the Hayward Marsh shall maintain compliance with the following effluent limitations at USD's discharge to the EBDA outfall interceptor, with compliance measured at Monitoring Location E-1 as described in the attached Monitoring and Reporting Program (Attachment E). The discharge from E-1 shall not exceed the following limitations (excluding total chlorine residual, which is measured for compliance at E-1-D).

**Table 3. Conventional Substances Effluent Limitations**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Max Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	30	45	---	---	---
Total Suspended Solids	mg/L	30	45	---	---	---
Total Chlorine Residual <sup>(1,2)</sup>	mg/L	---	---	---	---	0.0

<sup>(1)</sup> The discharge shall maintain compliance with this effluent limitation at E-1-D.

<sup>(2)</sup> Requirement defined as below the limit of detection in standard test methods defined in the latest edition of *Standard Methods for the Examination of Water and Wastewater*. Due to the remote location of Basin 1 and the lack of a power source, the samples are collected by grab samples and tested on-site using approved test kits. The Dischargers may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfite (or other dechlorinating chemical) dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Board staff may conclude that these false positive chlorine residual exceedances are not violations of this permit limitation.

2. **pH:** The pH of the discharge shall not exceed 8.5 nor be less than 6.5.

If the Dischargers employ continuous pH monitoring, the Dischargers shall be in compliance with the pH limitation specified herein, provided that both of the following conditions are satisfied:

- i. The total time during which the pH values are outside the required range shall not exceed 7 hours and 26 minutes in any calendar month.
  - ii. No individual excursion from the required range of pH values shall exceed 60 minutes.
3. **Fecal Coliform Bacteria:** The effluent shall not exceed a five day log mean fecal coliform density of 500 MPN/100 mL and a ninetieth percentile value of 1,100 MPN/100mL.

##### B. Effluent Limitations at Basins 2AE/2BE

1. The discharge at Basins 2AE and 2BE (the average of 2AE and 2BE) shall maintain compliance with the following effluent limitations with compliance measured at

Monitoring Locations 2AE and 2BE as described in the attached Monitoring and Reporting Program (Attachment E). These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this limitation. The discharge from 2AE/2BE shall not exceed the following limitations.

**Table 4. Toxic Substances Effluent Limitations** <sup>(1, 6)</sup>

Constituent	Water Quality-Based Effluent Limits (WQBELs)		Interim Limits <sup>(2)</sup>	
	Maximum Daily (MDEL) (µg/L)	Average Monthly (AMEL) (µg/L)	Maximum Daily (µg/L)	Average Monthly (µg/L)
Copper	5.1	2.9	13	----
Mercury <sup>(3)</sup>	0.042	0.020	----	0.087
Nickel	22	14	36	----
Cyanide <sup>(4)</sup>	1.0	0.46	17	----
4,4'-DDD <sup>(5)</sup>	0.0017	0.00084	0.05	
Heptachlor <sup>(5)</sup>	0.00042	0.00021	0.01	
Heptachlor Epoxide <sup>(5)</sup>	0.00022	0.00011	0.01	

**Footnotes:**

- (1) (a) All analyses shall be performed using current USEPA methods, or equivalent methods approved in writing by the Executive Officer.
- (b) Limits apply to the average concentration of all samples collected during the averaging period (Daily = 24-hour period; Monthly = calendar month).
- (2) The interim limitations for copper and cyanide shall remain in effect until May 17, 2010, and for nickel until April 27, 2010, or until the Regional Water Board amends the limitation(s) based on site-specific objectives (SSOs), whichever is sooner. The interim limitation for mercury will remain in effect until April 27, 2010, or until the Regional Water Board adopts a TMDL-based effluent limitation for mercury, whichever is sooner.
- (3) Effluent mercury monitoring shall be performed by using ultra-clean sampling and analysis techniques, with a method detection limit of 0.002 µg/L or lower. The mercury interim limit is derived from the Regional Water Board's *Statistical Analysis of Pooled Mercury Data, 2001*.
- (4) Compliance may be demonstrated by measurement of weak acid dissociable cyanide. See also B.2 for alternative compliance limits.
- (5) The interim limitations for 4,4'-DDD, Heptachlor, and Heptachlor Epoxide shall remain in effect until May 17, 2010.
- (6) As outlined in Section 2.4.5 of the SIP, the following are Minimum Levels that the Dischargers shall achieve for pollutants with effluent limits. The table below indicates the highest minimum level that the Dischargers' laboratory must achieve for calibration purposes.

<u>Constituent</u>	<u>Minimum Level</u>	<u>Units</u>
Copper	2	µg/L
Mercury	0.002	µg/L
Nickel	5	µg/L
Cyanide	5	µg/L
4,4'- DDD	0.05	µg/L
Heptachlor	0.01	µg/L
Heptachlor Epoxide	0.01	µg/L

2. Alternative Limits for Cyanide at Basins 2AE/2BE  
If a cyanide SSO for the receiving water becomes legally effective, based on the assumptions in *Draft Staff Report on Proposed Site-Specific Water Quality Objectives and Effluent Limit Policy for Cyanide for San Francisco Bay*, dated November 10, 2005, and summarized in the Fact Sheet, then upon its effective date, the following limits shall supercede those specified in B.1, above.

MDEL of 20 µg/L, and AMEL of 9.2 µg/L

### C. Mercury Mass Emission Limitation

Until TMDL and WLA efforts for mercury provide enough information to establish a different WQBEL, the Dischargers shall demonstrate that the combined mercury mass loading of USD's effluent to the Hayward Marsh and EBDA outfall does not increase by complying with the following:

1. Mass limit

*Interim Mass limit:* The 12-month moving average annual load for mercury shall not exceed 2.54 kg/year.

2. Compliance with this interim limit shall be evaluated as follows:

Flow = Running average of last 12 months of effluent flow in mgd, measured at EBDA Pump Station Discharge.

Hg Conc. = Running average of last 12 monthly mercury concentration measurements in µg/L corresponding to the above flows, measured at the Plant effluent wet well.

Mass emission limit, in kg/year = Flow x Hg Conc. x 1.3815

3. The mercury TMDL and WLAs will supersede this interim mass emission limitation upon their adoption. The Clean Water Act's anti-backsliding rule, Section 402(o), indicates that this Order may be modified to include a less stringent requirement following adoption of the TMDL and WLA, if the requirements for an exception to the rule are met.

## V. RECEIVING WATER LIMITATIONS

The surface water receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order.

### A. Marsh Basins 3A and 3B, and San Francisco Bay

The Dischargers shall provide sufficient circulation through the marsh to maintain the following conditions:

1. No visible, floating, suspended, or deposited oil or other products of petroleum origin;
2. No floating, suspended, or deposited macroscopic particulate matters or foam of sewage origin;
3. No bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
4. No toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife, or waterfowl, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
5. Alterations of temperature, turbidity, or apparent color beyond present natural background levels.

### B. San Francisco Bay

The discharge of waste shall not cause the following limits to be exceeded in Lower San Francisco Bay within one foot of the water surface (as measured at E-3):

1. Un-ionized Ammonia:   0.025 mg/L as N, annual median  
                                  0.4   mg/L as N, maximum
2. Dissolved Oxygen       5.0 mg/L, minimum

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.

3. Dissolved Sulfide       0.1 mg/L, maximum
4. pH                       Variation from natural ambient pH by more than 0.5 pH units
5. Nutrients               Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely effect beneficial uses.

- C. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board may reopen and modify this Order accordingly.

## VI. PROVISIONS

### A. Standard Provisions

1. **Federal Standard Provisions.** The Dischargers shall comply with all Standard Provisions included in Attachment D of this Order.
2. **Regional Water Board Standard Provisions.** The Dischargers shall comply with all applicable items of the *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (Attachment G), including any amendments thereto. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the specifications of this Order shall apply. The modifications to the Standard Provisions include the following:

F.4-Revise the first paragraph to read "Written reports shall be filed regularly ~~for each calendar month (unless specified otherwise) and filed no later than the fifteenth day of the following month~~ as described under IX.B. Self Monitoring Reports (SMRs)."

### B. Monitoring and Reporting Program Requirements

The Dischargers shall comply with the Monitoring and Reporting Program (MRP), and future revisions thereto, in Attachment E of this Order.

### C. Special Provisions

#### 1. Reopener Provisions

The Regional Water Board may modify or reopen this Order prior to its expiration date in any of the following circumstances:

- a. If present or future investigations demonstrate that the discharge(s) governed by this Order will, or cease to, have adverse impacts on water quality and/or beneficial uses of the receiving waters.
- b. As new or revised WQOs come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order will be modified as necessary to reflect updated WQOs.
- c. If translator or other water quality studies provide a basis for determining that a permit condition(s) should be modified.

- d. An administrative or judicial decision on a separate NPDES permit or WDR that addresses requirements similar to this discharge; and
- e. as authorized by law.

The Dischargers may request permit modification based on b, c, d, and e above. The Dischargers shall include in any such request an antidegradation and antibacksliding analysis.

## **2. Permit Compliance and Rescission of Previous Waste Discharge Requirements**

The Dischargers shall comply with the limitations, prohibitions, and other provisions of this Order on the effective date of this NPDES Permit. Requirements prescribed by this Order supersede the requirements prescribed by Order No. 99-024. Order No. 99-024 is hereby rescinded upon the effective date of this Order.

## **3. Effluent Characterization for Selected Constituents**

The Dischargers shall monitor and evaluate the discharge from E-1 for the constituents listed in Enclosure A of the Regional Water Board's August 6, 2001 Letter, according to its approved sampling plan submitted under the August 6, 2001 Letter. The Dischargers shall monitor, for a minimum one sampling event for the constituents listed in Enclosure A of the Regional Water Board's August 6, 2001 Letter, during the permit term. Compliance with this requirement shall be achieved in accordance with the specifications stated in the Regional Water Board's August 6, 2001 Letter under Effluent Monitoring for Minor Dischargers.

*Reporting:* A final report that presents all the data shall be submitted to the Regional Water Board no later than 180 days prior to the Order expiration date. This final report shall be submitted with the application for permit reissuance.

## **4. Ambient Background Receiving Water Study**

The Dischargers shall collect or participate in collecting background ambient receiving water monitoring for priority pollutants that is required to perform RPA and to calculate effluent limitations. The data on the conventional water quality parameters (pH, salinity, and hardness) shall also be sufficient to characterize these parameters in the receiving water at a point after the discharge has mixed with the receiving waters. This provision may be met through monitoring through the Collaborative BACWA Study, or a similar ambient monitoring program for San Francisco Bay. This permit may be reopened, as appropriate, to incorporate effluent limits or other requirements based on Regional Water Board review of these data.

*Final Report:* The Dischargers shall submit a final report that presents all the data to the Regional Water Board 180 days prior to Order expiration. This final report shall be submitted with the application for permit reissuance.



## 5. Pollution Prevention and Pollutant Minimization Program

- a) The Dischargers shall conduct, in a manner acceptable to the Executive Officer, a Pollution Minimization Program to reduce pollutant loadings of copper, mercury, nickel, and cyanide to the treatment plant and therefore to the receiving waters. The Dischargers shall also implement any applicable additional pollution minimization measures described in the Basin Plan implementation requirements associated with the Cyanide SSO if and when those SSOs become effective and alternative limits take effect.
- b) The Dischargers shall submit an annual report, acceptable to the Executive Officer, no later than March 1 of each year. Annual reports shall cover January through December of the preceding year. Annual reports shall include at least the following information:
  - i. *A brief description of its treatment facilities and treatment processes.*
  - ii. *A discussion of the current pollutants of concern.* Periodically, the Dischargers shall analyze its own situation to determine which pollutants are currently a problem and/or which pollutants may be potential future problems. This discussion shall include the reasons why the pollutants were chosen.
  - iii. *Identification of sources for the pollutants of concern.* This discussion shall include how the Dischargers intend to estimate and identify sources of the pollutants. The Dischargers shall also identify sources or potential sources not directly within the ability or authority of the Dischargers to control, such as pollutants in the potable water supply and air deposition.
  - iv. *Identification of tasks to reduce the sources of the pollutants of concern.* This discussion shall identify and prioritize tasks to address the Dischargers' pollutants of concern. The Dischargers may implement tasks themselves or participate in group, regional, or national tasks that will address its pollutants of concern. The Dischargers are strongly encouraged to participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so. A time-line shall be included for the implementation of each task.
  - v. *Outreach to employees.* The Dischargers shall inform employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants of concern into the treatment facilities. The Dischargers may provide a forum for employees to provide input to the Program.
  - vi. *Discussion of criteria used to measure the program's and tasks' effectiveness.* The Dischargers shall establish criteria to evaluate the effectiveness of its Pollution Minimization Program. This shall also include a discussion of the specific criteria used to measure the effectiveness of each of the tasks in item b. (iii), b. (iv), and b. (v).
  - vii. *Documentation of efforts and progress.* This discussion shall detail all the Dischargers' activities in the Pollution Minimization Program during the reporting year.
  - viii. *Evaluation of program's and tasks' effectiveness.* The Dischargers shall use the criteria established in b. (vi) to evaluate the Program's and tasks' effectiveness.
  - ix. *Identification of Specific Tasks and Time Schedules for Future Efforts.* Based on the evaluation, the Dischargers shall detail how it intends to continue or change its tasks to

more effectively reduce the amount of pollutants to the treatment facilities, and subsequently in its effluent.

- c) According to Section 2.4.5 of the SIP, when there is evidence that a priority pollutant is present in the effluent above an effluent limitation and either:
  - i. A sample result is reported as detected, but not quantified, and the effluent limitation is less than the RL; or,
  - ii. A sample result is reported as not detected, and the effluent limitation is less than the MDL;

the Dischargers shall expand their existing Pollution Minimization Programs to include the reportable priority pollutant. A priority pollutant becomes a reportable priority pollutant (1) when there is evidence that it is present in the effluent above an effluent limitation and either (c)(i), or c(ii) is triggered, or (2) if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported ML.

- d) If triggered by the reasons in (c) above and notified by the Executive Officer, the Dischargers shall submit within 6 months of notification, the following:
  - i. An annual review and semiannual monitoring of potential sources of the reportable priority pollutant(s), which may include other monitoring, or alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data.
  - ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the treatment system, or alternative measures approved by the Executive Officer when it is demonstrated that influent monitoring is unlikely to produce useful analytical data.
  - iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation.
  - iv. Development of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy.
  - v. An annual status report that shall be sent to the Board including the following:
    - (1) All Pollution Prevention monitoring results for the previous year
    - (2) A list of potential sources of the reportable priority pollutant(s)
    - (3) A summary of all actions undertaken pursuant to the control strategy
    - (4) A description of actions to be taken in the following year.
- e) To the extent that the requirements of the Pollution Prevention Program and the Pollutant Minimization Program overlap, the Dischargers are allowed to continue,

modify, or expand their Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.

- f) These Pollution Prevention/Pollutant Minimization Program requirements are not intended to fulfill the requirements in the Clean Water Enforcement and Pollution Prevention Act of 1999 (Senate Bill 709).

## **6. Optional Mass Offset**

The Dischargers may submit to the Regional Water Board for approval a mass offset plan to reduce 303(d)-listed pollutants to the same watershed or drainage basin. The Regional Water Board may modify this Order to allow an approved mass offset program.

## **7. Sewer System Management Plan**

The Dischargers shall fully participate in BACWA's collaborative program to develop guidelines for sewer system management plans (SSMPs). The Dischargers shall report sanitary sewer overflows electronically and develop and implement a Discharger-specific SSMP, acceptable to the Executive Officer.

## **8. Marsh Operation**

The Regional Water Board expects the Dischargers to operate and maintain the Facility without chemical treatment (i.e., herbicides and algaecides) and to implement all feasible measures prior to using chemical treatment. If chemical treatment is proposed by the Dischargers, then such treatment shall be in accordance with the provisions of the Basin Plan.

## **9. Marsh Management Plan**

Within 365 days of the effective date of this Order, the Dischargers shall review and update their Marsh Management Plan, as appropriate to ensure compliance with receiving water limitations V.A. This review shall document how the Dischargers will meet water quality objectives for unionized ammonia in portions of the marsh not used for treatment, and ensure that dissolved oxygen levels are not adversely affecting aquatic life. At a minimum, this review shall include:

- a) documentation of past marsh management activities to determine why unionized ammonia concentrations decreased significantly in Basins 3A and 3B between 2000 and 2005.
- b) an explanation for the significant increase in salinity in Basins 3A and 3B between 2000 and 2005 (e.g., documentation of tidal gate operations),
- c) feasibility of modifying the existing mixing channel to provide more tidal influence, if necessary, to meet water quality objectives,

d) an analysis on the use of vegetation to reduce algal growth (e.g., the feasibility of removing the most limiting nutrient - nitrogen or phosphorus in the treatment portion of Hayward Marsh), and

e) a proposal for continuously monitoring portions of Hayward Marsh for dissolved oxygen, pH, temperature, and salinity to better understand diurnal patterns and the effect this may have on aquatic life.

For sections c-e of this review, the Dischargers shall develop an implementation schedule, as appropriate. The Dischargers shall describe in a separate section of its annual self-monitoring report, the results of its annual review of marsh management processes, and include an estimated time schedule for updating its marsh management plan to document any revisions in marsh management implemented in the previous year.

#### **10. Marsh Contingency Plan**

The Dischargers shall continue to implement the following approved programs/plans: (a) a Marsh Contingency Operations Plan for the protection of marsh and Bay during contingency operations, (b) a program to minimize public contact with the reclaimed wastewater, and (c) a special receiving water monitoring plan and program to assess impacts on nearshore biota. A copy of all three shall also be sent to State Department of Health Services. To further minimize public contact with reclaimed wastewater, within 60 days of the effective date of this Order, the Dischargers shall post additional signs along the discharge channel from Hayward Marsh to Lower San Francisco Bay.

Annually, the Dischargers shall review and update as necessary, their Marsh Contingency Operation Plan. The discharge of pollutants in violation of this Order where the Dischargers have failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code. Plan revisions, or a letter stating that no changes are needed, shall be included in a separate section of the Dischargers' annual self-monitoring report.

#### **11. Primary Responsibility for Operation**

For purposes of enforcement of these requirements the Regional Water Board will consider the EBRPD to have the primary responsibility for the operation of the marsh to meet water quality objectives and prevention of nuisance, and USD to be responsible for supplying reclaimed wastewater as specified in the Effluent Limitations. Basins 1, 2A, and 2B, which are designated solely as part of the treatment process and are not waters of the United States, can not become "attractive nuisances" for wildlife. The Dischargers are required to employ best management practices in order to avoid harming the wildlife which frequents these basins.

## **12. Actions for Compliance Schedule Pollutants**

This Order grants compliance schedules for copper, mercury, nickel, and cyanide. Pursuant to Section 2.1 of the SIP and Chapter 4 of the Basin Plan, the Dischargers shall (a) conduct pollution minimization in accordance with Provision C.5, (b) participate in and support the development of a TMDL or an SSO for copper, mercury, nickel, and cyanide, and (c) submit an update to the Regional Water Board in the annual self-monitoring report to document its efforts toward development of TMDL(s) or SSO(s). Board staff shall review the status of TMDL development. In the event TMDL(s) or SSO(s) are not developed for copper, mercury, nickel, or cyanide, by July 1, 2009, the Dischargers shall submit by July 1, 2009, a schedule that documents how it will further reduce pollutant concentrations to ensure compliance with the final limits specified in Effluent Limitations and Discharge Specifications B.1.

## **13. Alternative Compliance**

If, at the end of the interim compliance periods, the Dischargers are unable to achieve the final effluent limitations despite implementation of reasonable pollution prevention and control measures, the Dischargers may choose to discontinue the discharge of reclaimed wastewater to the Hayward Marsh.

## **14. Bacteriological Monitoring Study**

Within 120 days of the effective date of this Order, the Dischargers shall submit a monitoring proposal (that includes portions of Hayward Marsh), and implementation schedule to confirm bacteriological levels in San Francisco Bay (near the discharge point from Hayward Marsh) are within Basin Plan objectives in Tables 3-1 and 3-2.

## **15. Use Attainability Analysis for Basins 3A and 3B**

To support a future Basin Plan amendment designating beneficial uses of Basins 3A and 3B of Hayward Marsh, the Dischargers shall:

Task	Due Date
Summarize all information available on the uses of Basins 3A and 3B	November 1, 2006
In conjunction with input from Water Board staff, submit additional information that will enable the Water Board to conduct a use attainability analysis for Basins 3A and 3B	November 1, 2007

## **VII. COMPLIANCE DETERMINATION**

Compliance with the effluent limitations contained in Section IV of this Order will be determined as specified below:

### **A. Average Monthly Effluent Limitation (AMEL)**

If the average of daily discharges over a calendar month exceeds the AMEL for a given parameter, an alleged violation will be flagged and the Dischargers will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). The average of daily discharges over the calendar month that exceeds the AMEL for a parameter will be considered out of compliance for that month only. If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Dischargers will be considered out of compliance for that calendar month. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

### **B. Average Weekly Effluent Limitation (AWEL)**

If the average of daily discharges over a calendar week exceeds the AWEL for a given parameter, an alleged violation will be flagged and the Dischargers will be considered out of compliance for each day of that week for that parameter resulting in 7 days of noncompliance. The average of daily discharges over the calendar week that exceeds the AWEL for a parameter will be considered out of compliance for that week only. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Dischargers will be considered out of compliance for that calendar week. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

### **C. Maximum Daily Effluent Limitation (MDEL)**

If a daily discharge exceeds the MDEL for a given parameter, an alleged violation will be flagged and the Dischargers will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

### **D. Instantaneous Minimum Effluent Limitation**

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, a violation will be flagged and the Dischargers will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

### **E. Instantaneous Maximum Effluent Limitation**

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, a violation will be flagged and the Dischargers will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a

calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

## ATTACHMENT A - DEFINITIONS

**Average Monthly Effluent Limitation (AMEL):** the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

**Average Weekly Effluent Limitation (AWEL):** the highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

**Daily Discharge:** Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the un-weighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

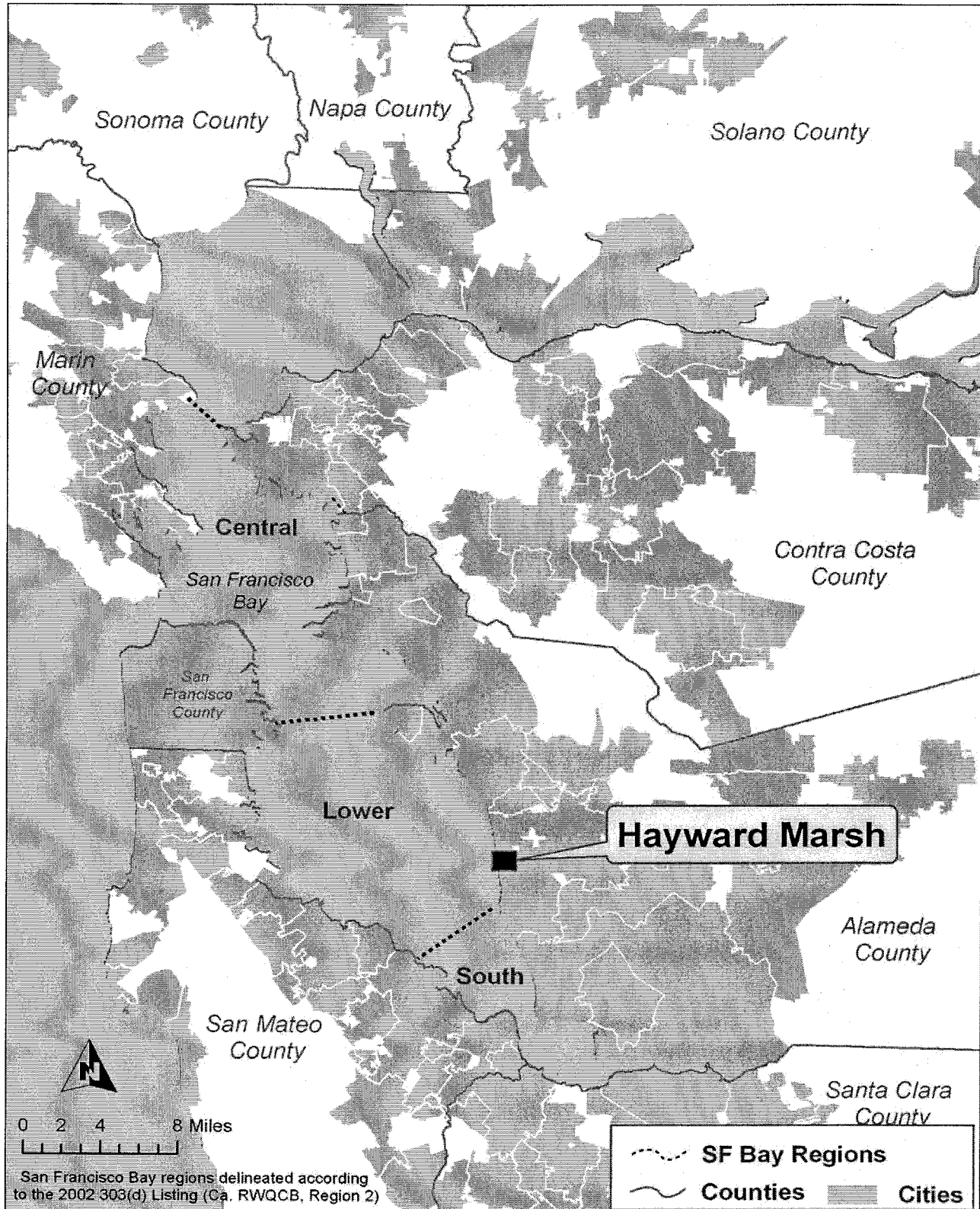
**Instantaneous Maximum Effluent Limitation:** the highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

**Instantaneous Minimum Effluent Limitation:** the lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

**Maximum Daily Effluent Limitation (MDEL):** the highest allowable daily discharge of a pollutant.



## ATTACHMENT B - LOCATION MAP



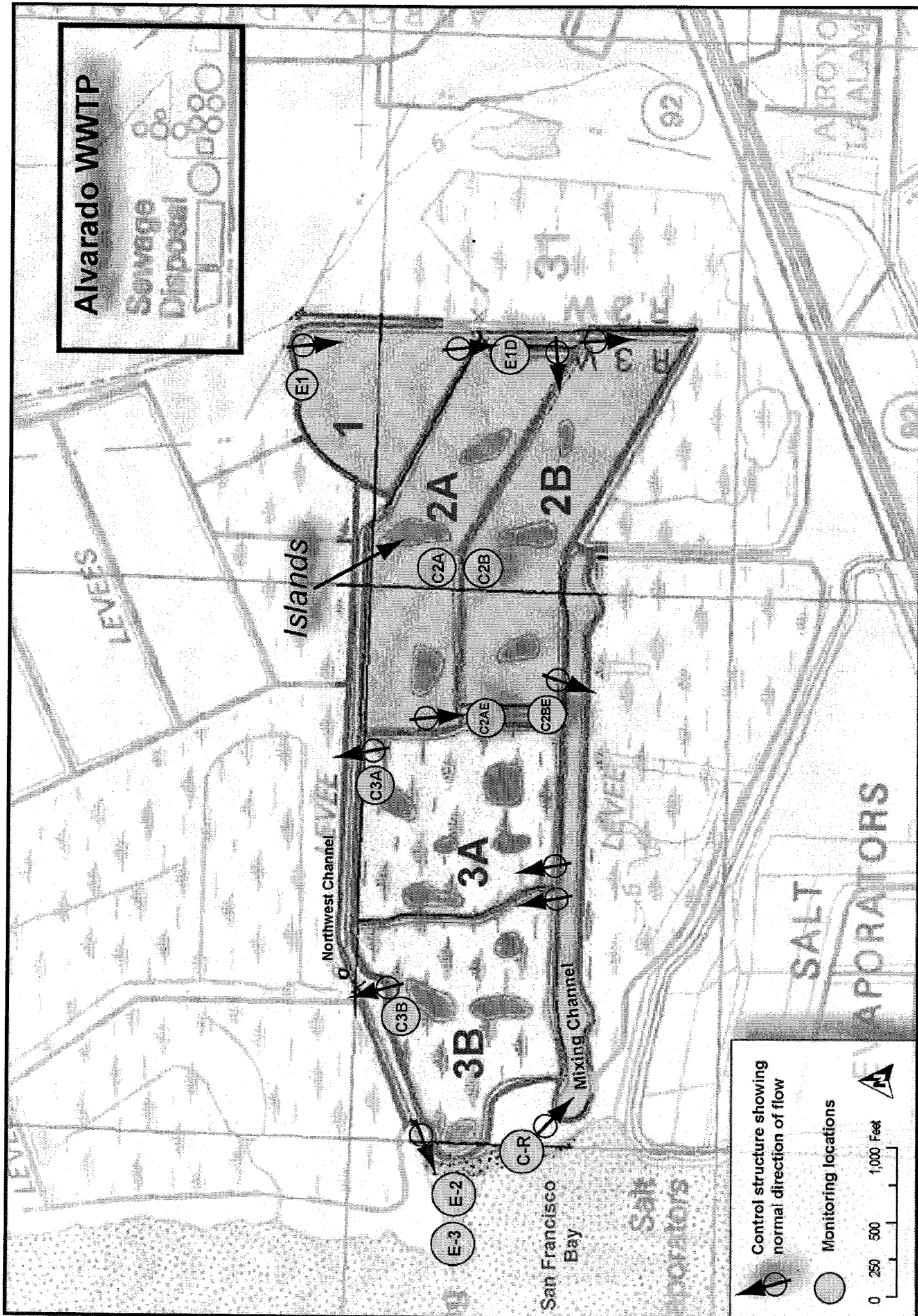
Union Sanitary District,  
Hayward Shoreline Marsh  
ORDER NO. R2-2006-0031  
NPDES NO. CA0038636

**ATTACHMENT C - HAYWARD SHORELINE MARSH FLOW SCHEMATIC AND SAMPLING LOCATIONS**

Attachment C – Wastewater Flow Schematic  
Order NO. R2-2006-0031

# Alvarado WWTP

Sewage  
Disposal



Control structure showing  
normal direction of flow

Monitoring locations



## **ATTACHMENT D - FEDERAL STANDARD PROVISIONS**

### **I. STANDARD PROVISIONS – PERMIT COMPLIANCE**

#### **A. Duty to Comply**

1. The Dischargers must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, or denial of a permit renewal application [40 CFR §122.41(a)].
2. The Dischargers shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not been modified to incorporate the requirement [40 CFR §122.41(a)(1)].

#### **B. Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order [40 CFR §122.41(c)].

#### **C. Duty to Mitigate**

The Dischargers shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment [40 CFR §122.41(d)].

#### **D. Proper Operation and Maintenance**

The Dischargers shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Dischargers to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order [40 CFR §122.41(e)].

#### **E. Property Rights**

1. This Order does not convey any property rights of any sort or any exclusive privileges [40 CFR §122.41(g)].
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations [40 CFR §122.5(c)].

## F. Inspection and Entry

The Dischargers shall allow the Regional Water Quality Control Board (RWQCB), State Water Resources Control Board (SWRCB), United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to [40 CFR §122.41(i)] [CWC 13383(c)]:

1. Enter upon the Dischargers' premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order [40 CFR §122.41(i)(1)];
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order [40 CFR §122.41(i)(2)];
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order [40 CFR §122.41(i)(3)];
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location [40 CFR §122.41(i)(4)].

## G. Bypass

1. Definitions
  - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility [40 CFR §122.41(m)(1)(i)].
  - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production [40 CFR §122.41(m)(1)(ii)].
2. Bypass not exceeding limitations – The Dischargers may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3 and I.G.5 below [40 CFR §122.41(m)(2)].
3. Prohibition of bypass – Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless [40 CFR §122.41(m)(4)(i)]:
  - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage [40 CFR §122.41(m)(4)(A)];

- b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance [40 CFR §122.41(m)(4)(B)]; and
  - c. The Discharger(s) submitted notice to the Regional Water Board as required under Standard Provision – Permit Compliance I.G.5 below [40 CFR §122.41(m)(4)(C)].
4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above [40 CFR §122.41(m)(4)(ii)].
5. Notice
- a. Anticipated bypass. If the Discharger(s) knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass [40 CFR §122.41(m)(3)(i)].
  - b. Unanticipated bypass. The Discharger(s) shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below [40 CFR §122.41(m)(3)(ii)].

## H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Discharger(s). An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation [40 CFR §122.41(n)(1)].

- 1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph H.2 of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review [40 CFR §122.41(n)(2)].
- 2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that [40 CFR §122.41(n)(3)]:
  - a. An upset occurred and that the Dischargers can identify the cause(s) of the upset [40 CFR §122.41(n)(3)(i)];
  - b. The permitted facility was, at the time, being properly operated [40 CFR §122.41(n)(3)(i)];

- c. The Dischargers submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b [40 CFR §122.41(n)(3)(iii)]; and
  - d. The Dischargers complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above [40 CFR §122.41(n)(3)(iv)].
3. Burden of proof. In any enforcement proceeding, the Discharger(s) seeking to establish the occurrence of an upset has the burden of proof [40 CFR §122.41(n)(4)].

## **II. STANDARD PROVISIONS – PERMIT ACTION**

### **A. General**

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Dischargers for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition [40 CFR §122.41(f)].

### **B. Duty to Reapply**

If the Dischargers wish to continue an activity regulated by this Order after the expiration date of this Order, the Dischargers must apply for and obtain a new permit [40 CFR §122.41(b)].

### **C. Transfers**

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Dischargers and incorporate such other requirements as may be necessary under the CWA and the CWC [40 CFR §122.41(l)(3)] [40 CFR §122.61].

## **III. STANDARD PROVISIONS – MONITORING**

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity [40 CFR §122.41(j)(1)].
- B. Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order [40 CFR §122.41(j)(4)] [40 CFR §122.44(i)(1)(iv)].

#### **IV. STANDARD PROVISIONS – RECORDS**

- A.** Except for records of monitoring information required by this Order related to the Dischargers' sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the Dischargers shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time [40 CFR §122.41(j)(2)].
- B. Records of monitoring information shall include:**
1. The date, exact place, and time of sampling or measurements [40 CFR §122.41(j)(3)(i)];
  2. The individual(s) who performed the sampling or measurements [40 CFR §122.41(j)(3)(ii)];
  3. The date(s) analyses were performed [40 CFR §122.41(j)(3)(iii)];
  4. The individual(s) who performed the analyses [40 CFR §122.41(j)(3)(iv)];
  5. The analytical techniques or methods used [40 CFR §122.41(j)(3)(v)]; and
  6. The results of such analyses [40 CFR §122.41(j)(3)(vi)].
- C. Claims of confidentiality for the following information will be denied [40 CFR §122.7(b)]:**
1. The name and address of any permit applicant or Discharger [40 CFR §122.7(b)(1)]; and
  2. Permit applications and attachments, permits and effluent data [40 CFR §122.7(b)(2)].



## **V. STANDARD PROVISIONS – REPORTING**

### **A. Duty to Provide Information**

The Dischargers shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Dischargers shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order [40 CFR §122.41(h)] [CWC 13267].

### **B. Signatory and Certification Requirements**

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with paragraph (2.) and (3.) of this provision [40 CFR §122.41(k)]
2. All permit applications shall be signed as follows:
  - a. For a corporation: By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures [40 CFR §122.22(a)(1)];
  - b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively [40 CFR §122.22(a)(2)]; or
  - c. For a municipality, State, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA) [40 CFR §122.22(a)(3)].

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in paragraph (b) of this provision, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described in paragraph (2.) of this provision [40 CFR §122.22(b)(1)];
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company (a duly authorized representative may thus be either a named individual or any individual occupying a named position) [40 CFR §122.22(b)(2)]; and
  - c. The written authorization is submitted to the Regional Water Board, State Water Board, or USEPA [40 CFR §122.22(b)(3)].
4. If an authorization under paragraph (3.) of this provision is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (3.) of this provision must be submitted to the Regional Water Board, State Water Board or USEPA prior to or together with any reports, information, or applications, to be signed by an authorized representative [40 CFR §122.22(c)].
5. Any person signing a document under paragraph (2.) or (3.) of this provision shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations" [40 CFR §122.22(d)].

### **C. Monitoring Reports**

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program in this Order [40 CFR §122.41(l)(4)].
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices [40 CFR §122.41(l)(4)(i)].

3. If the Dischargers monitor any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board [40 CFR §122.41(l)(4)(ii)].
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order [40 CFR §122.41(l)(4)(iii)].

#### **D. Compliance Schedules**

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date [40 CFR §122.41(l)(5)].

#### **E. Twenty-Four Hour Reporting**

1. The Dischargers shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Dischargers become aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Dischargers become aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance [40 CFR §122.41(l)(6)(i)].
2. The following shall be included as information that must be reported within 24 hours under this paragraph [40 CFR §122.41(l)(6)(ii)]:
  - a. Any unanticipated bypass that exceeds any effluent limitation in this Order [40 CFR §122.41(l)(6)(ii)(A)].
  - b. Any upset that exceeds any effluent limitation in this Order [40 CFR §122.41(l)(6)(ii)(B)].
  - c. Violation of a maximum daily discharge limitation for any of the pollutants listed in this Order to be reported within 24 hours [40 CFR §122.41(l)(6)(ii)(C)].
3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours [40 CFR §122.41(l)(6)(iii)].

## **F. Planned Changes**

The Dischargers shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when [40 CFR §122.41(l)(1)]:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b) [40 CFR §122.41(l)(1)(i)]; or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR Part 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1) [40 CFR §122.41(l)(1)(ii)].
3. The alteration or addition results in a significant change in the Dischargers' sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan [40 CFR §122.41(l)(1)(iii)].

## **G. Anticipated Noncompliance**

The Dischargers shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements [40 CFR §122.41(l)(2)].

## **H. Other Noncompliance**

The Dischargers shall report all instances of noncompliance not reported under Standard Provisions – Reporting E.1, E.2, and E.3 at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E [40 CFR §122.41(l)(7)].

## **I. Other Information**

When the Dischargers become aware that they failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Dischargers shall promptly submit such facts or information [40 CFR §122.41(l)(8)].

## VI. STANDARD PROVISIONS – ENFORCEMENT

- A. The CWA provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$25,000 per day for each violation. The CWA provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the Clean Water Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions [40 CFR §122.41(a)(2)] [CWC 13385 and 13387].
- B. Any person may be assessed an administrative penalty by the Regional Water Board for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000 [40 CFR §122.41(a)(3)].
- C. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both [40 CFR §122.41(j)(5)].

- D. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both [40 CFR §122.41(k)(2)].

## VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

### A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural dischargers shall notify the Regional Water Board as soon as they know or have reason to believe [40 CFR §122.42(a)]:

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [40 CFR §122.42(a)(1)]:
  - a. 100 micrograms per liter ( $\mu\text{g/L}$ ) [40 CFR §122.42(a)(1)(i)];
  - b. 200  $\mu\text{g/L}$  for acrolein and acrylonitrile; 500  $\mu\text{g/L}$  for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony [40 CFR §122.42(a)(1)(ii)];
  - c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [40 CFR §122.42(a)(1)(iii)]; or
  - d. The level established by the Regional Water Board in accordance with 40 CFR §122.44(f) [40 CFR §122.42(a)(1)(iv)].
2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [40 CFR §122.42(a)(2)]:
  - a. 500 micrograms per liter ( $\mu\text{g/L}$ ) [40 CFR §122.42(a)(2)(i)];
  - b. 1 milligram per liter (mg/L) for antimony [40 CFR §122.42(a)(2)(ii)];
  - c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [40 CFR §122.42(a)(2)(iii)]; or
  - d. The level established by the Regional Water Board in accordance with 40 CFR §122.44(f) [40 CFR §122.42(a)(2)(iv)].

**B. Publicly-Owned Treatment Works (POTWs)**

All POTWs shall provide adequate notice to the Regional Water Board of the following [40 CFR §122.42(b)]:

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants [40 CFR §122.42(b)(1)]; and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order [40 CFR §122.42(b)(2)].
3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW [40 CFR §122.42(b)(3)].

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## **ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)**

The Code of Federal Regulations (CFR) at 40 CFR §122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC sections 13267 and 13383 also authorize the Regional Water Board to require technical and monitoring reports. This Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements that implement the Federal and State regulations.

### **I. General Monitoring Provisions**

- A.** The Dischargers shall comply with the MRP for this Order as adopted by the Regional Water Board, and with all of the Self-Monitoring Program, Part A, adopted August 1993 (SMP). The MRP and SMP may be amended by the Executive Officer pursuant to USEPA regulations 40 CFR 122.62, 122.63, and 124.5. If any discrepancies exist between the MRP and SMP, the MRP prevails.
- B.** Sampling is required during the entire year when discharging. All analyses shall be conducted using current USEPA methods, or that have been approved by the USEPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5, or equivalent methods that are commercially and reasonably available, and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable effluent limits. Equivalent methods must be more sensitive than those specified in 40 CFR 136, must be specified in the permit, and must be approved for use by the Executive Officer, following consultation with the State Water Board's Quality Assurance Program. The Regional Water Board will find the Dischargers in violation of the limitation if the discharge concentration exceeds the effluent limitation and the Reporting Level for the analysis for that constituent.

### **II. Modifications to Part A**

Includes the following modifications of Part A:

1. The second sentence of Section F.1, Spill Reports, is revised to read as follows:  
"Spills shall be reported to this Regional Water Board [(510) 622-2300 on weekdays during office hours from 8a.m. to 5 p.m.], and to the Office of Emergency Services [(800) 852-7550 during non office hours) immediately after the occurrence.  
  
Section F.1.b is revised to read: "Best estimate of volume involved".  
Section F.1.d is revised to read: "Cause of spill or overflow".  
Section F.1.i is revised to read: "Agencies of persons notified".
2. Paragraph G.5 is revised to read:  
"Average monthly values are calculated as the sum of all measured discharge values (measured during the specified period i.e. calendar month), divided by the number of days during that specific period"
3. Paragraph D.5 shall apply to the Basins with the following addition:  
(c) Special attention shall be paid to observations for vector nuisance and signs of waterfowl botulism per Marsh Management Plan.

4. Paragraph F.4 should include the following addition:  
“The Dischargers may file separate self-monitoring reports detailing compliance with the Order”.
5. The following section of Paragraph C.2.a is not applicable:  
“At least one sampling day in each seven shall reflect one day of weekend discharge, one day of peak loading and during major unit operation shutdown or startup.”
6. Paragraph C.4b is revised to read:  
“Receiving water samples shall be collected during higher slack water period. Samples shall be collected within the discharge plume and down current of the discharge point so as to be representative, unless otherwise stipulated.”

### III. Monitoring Locations

The Dischargers shall establish the following monitoring locations, as shown in Attachment C, to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

**Table E- 1. Monitoring Station Locations**

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Marsh Influent (Plant Effluent)	E-1	At any point in the outfall from the USD's treatment facilities between the point of discharge and the point at which all waste tributary to that outfall is present (Attachment C).
Marsh Waters	E-1-D	Located at the Basin 1 discharge point, consisting of discharge from Basin 1
	C-2A	Located midway through Basin 2A
	C-2B	Located midway through Basin 2B
	C-3A	Located midway through Basin 3A
	C-3B	Located midway through Basin 3B
	C-2AE	Located at Basin 2A discharge point, consisting of discharge from Basin 2A
Marsh Effluent	C-2BE	Located at Basin 2B discharge point, consisting of discharge from Basin 2B
	E-2	Located at the marsh discharge point, and consisting entirely of discharge from the marsh.
Receiving Waters	E-3	Outfall, an earthen discharge channel right after E-2, discharge of marsh effluent to Lower San Francisco Bay
	C-R	At a point in Lower San Francisco Bay satisfactory to the Executive Officer that is representative of a mixture of Lower San Francisco Bay and marsh discharges.
	C-R-B	At a point in Lower San Francisco Bay satisfactory to the Executive Officer that is representative of the portion of the Lower San Francisco Bay which is not being affected by the Marsh discharge.

#### IV. MARSH INFLUENT MONITORING REQUIREMENTS

##### A. Monitoring Location – Marsh Influent

1. The Dischargers shall monitor influent to the Marsh (the plant effluent) at E-1 as follows:

**Table E- 2. Marsh Influent Monitoring (E-1)**

Parameter	Units	Minimum Sampling Frequency		Required Analytical Test Method
		C-24	G <sup>(1)</sup>	
Flow Rate <sup>(2)</sup>	Mgd	D		
BOD, 5-day, 20° C	mg/L	W		
Total Suspended Solids (TSS)	mg/L & Kg/day	W		
Fecal Coliform	MPN/100 ml		W	
Dissolved Oxygen (DO)	mg/L & % saturation		W	
Sulfides (if DO < 5 mg/L)	mg/L		W	
Hardness	mg/L as CaCO <sub>3</sub>	M		
pH	Units		M	
Ammonia Nitrogen	mg/L & Kg/day		M	
Nitrate Nitrogen	mg/L & Kg/day		M	
Total Phosphorus <sup>6</sup>	mg/L & Kg/day		M	
Temperature	°C		W	
Salinity	Ppt		M	
Copper	µg/L & Kg/day	Q		
Mercury <sup>(3)</sup>	µg/L & Kg/day	Q		
Nickel	µg/L & Kg/day	Q		
Cyanide	µg/L & Kg/day		Q	
4,4' DDD	µg/L & Kg/day		A	
Heptachlor	µg/L & Kg/day		A	
Heptachlor Epoxide	µg/L & Kg/day		A	
Priority Pollutants <sup>(4)(5)</sup>	In accordance with Provision C.3			
All Applicable Standard Observations	Various		W	
Un-ionized Ammonia	mg/L		M	

(1) Grab samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.

- (2) Flow Monitoring: Marsh influent flows shall be measured continuously, and recorded and reported daily. For influent flows, the following information shall also be reported monthly:

Daily: Daily Flow (MG)  
Monthly: Average Daily Flow (MGD)  
Monthly: Maximum Daily Flow (MGD)  
Monthly: Minimum Daily Flow (MGD)  
Monthly: Total Flow Volume (MG)

- (3) Mercury: The Dischargers may, at their option, sample effluent mercury either as grab or as 24-hour composite samples. Use ultra-clean sampling (U.S. EPA 1669) to the maximum extent practicable and ultra-clean analytical methods

(U.S. EPA 1631) for mercury monitoring. The Dischargers may use alternative methods of analysis (such as U.S. EPA 245), if that alternative method has an ML of 2 ng/L or less.

- (4) Chlorinated dibenzodioxins and chlorinated dibenzofurans shall be analyzed using the latest version of U.S. EPA Method 1613; the analysis shall be capable of achieving one-half of the U.S EPA MLs. Also, the Dischargers shall participate as appropriate the regional collaborative effort with other POTWs to validate the 4-liter sample methodology for lowering the detection limit for dioxins. At a minimum, the Dischargers are required to monitor once per year for the life of this Order. Alternative methods of analysis must be approved by the Executive Officer.
- (5) Priority Pollutants: Sampling for all priority pollutants in the SIP is addressed in a letter dated August 6, 2001, from Regional Water Board Staff: "Requirements for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy" (Attachment G).
- (6) Total Phosphorus: Total Phosphorus monitoring shall be conducted for one year from the effective date of this Order.

## V. MARSH WATERS MONITORING REQUIREMENTS

### A. Monitoring Location – Marsh Waters

1. The Dischargers shall monitor the waters within the Marsh at E-1-D as follows:

**Table E- 3. Marsh Waters Monitoring (E-1-D)**

Parameter	Units	Minimum Sampling Frequency		Required Analytical Test Method
		C-24	G	
Dissolved Oxygen (DO)	mg/L & % saturation		M	
Sulfides (if DO < 5 mg/L)	mg/L		M	
All Applicable Standard Observations	Various		M	
Chlorine Residual <sup>(1)</sup>	mg/L		D	

- (1) Chlorine Residual: Dechlorinated effluent (E-1-D) should be monitored on a daily basis. Due to the remote location of Basin 1, the samples will be collected as grab samples and tested on-site using approved test kits. If continuous monitoring is used, chlorine residual analyzers shall be calibrated against grab samples as frequently as necessary to maintain accurate control and reliability. If an effluent violation is detected, grab samples shall be taken every 30 minutes until compliance is achieved, and the maximum and average concentrations and duration of each non-zero residual event shall be reported along with the cause and corrective actions taken.

2. The Dischargers shall monitor the waters within the Marsh at C-2A, C-2B, C-3A, C-3B as follows:

**Table E- 4. Marsh Waters Monitoring (C-2A, C-2B, C-3A, C-3B)**

Parameter	Units	Minimum Sampling Frequency		Required Analytical Test Method
		C-24	G <sup>(1)</sup>	
Dissolved Oxygen (DO)	mg/L & % saturation		M	
Sulfides (if DO < 5 mg/L)	mg/L		M	
pH	units		M	
Ammonia Nitrogen	mg/L & Kg/day		M	
Nitrate Nitrogen	mg/L & Kg/day		M	
Total Phosphorus <sup>2</sup>	mg/L & Kg/day		M	
Temperature	°C		M	
Salinity	ppt		M	
All Applicable Standard Observations	Various		W	
Un-ionized Ammonia	mg/L		M	

- (1) Grab samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.
- (2) Total Phosphorus. Total Phosphorus monitoring shall be conducted for one year from the effective date of this Order.

3. The Dischargers shall monitor the waters within the Marsh at C-2AE, C-2BE as follows:

**Table E- 5. Marsh Waters Monitoring (C-2AE, C-2BE)**

Parameter	Units	Minimum Sampling Frequency		Required Analytical Test Method
		C-24	G <sup>(1)</sup>	
pH	units		M	
Ammonia Nitrogen	mg/L & Kg/day		M	
Nitrate Nitrogen	mg/L & Kg/day		M	
Total Phosphorus <sup>(5)</sup>	mg/L & Kg/day		M	
Salinity	ppt		M	
Copper	µg/L & Kg/day	Q		
Mercury <sup>(2)</sup>	µg/L & Kg/day	Q		
Nickel	µg/L & Kg/day	Q		
Cyanide	µg/L & Kg/day		Q	
4,4'-DDD	µg/L & Kg/day		A	
Heptachlor	µg/L & Kg/day		A	
Heptachlor Epoxide	µg/L & Kg/day		A	
Un-ionized Ammonia	mg/L		M	
Priority Pollutants <sup>(3)(4)</sup>	Once in five years			

- (1) Grab samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.
- (2) Mercury: The Dischargers may, at their option, sample effluent mercury either as grab or as 24-hour composite samples. Use ultra-clean sampling (U.S. EPA 1669) to the maximum extent practicable and ultra-clean analytical methods (U.S. EPA 1631) for mercury monitoring. The Dischargers may use alternative methods of analysis (such as U.S. EPA 245), if that alternative method has an ML of 2 ng/L or less.
- (3) Chlorinated dibenzodioxins and chlorinated dibenzofurans shall be analyzed using the latest version of U.S. EPA Method 1613; the analysis shall be capable of achieving one-half of the U.S EPA MLs. Also, the Dischargers shall participate as appropriate the regional collaborative effort with other POTWs to validate the 4-liter sample methodology for lowering the detection limit for dioxins. At a minimum, the Dischargers are required to monitor once per year for the life of this Order. Alternative methods of analysis must be approved by the Executive Officer.
- (4) Priority Pollutants: Sampling for all priority pollutants in the SIP is addressed in a letter dated August 6, 2001, from Regional Water Board Staff: "Requirements for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy" (Attachment G).
- (5) Total Phosphorus. Total Phosphorus monitoring shall be conducted for one year from the effective date of this Order.

## VI. MARSH EFFLUENT MONITORING REQUIREMENTS

### A. Monitoring Location – Marsh Effluent

1. The Dischargers shall monitor the Marsh Effluent at E-2 as follows:

**Table E- 6. Marsh Effluent Monitoring (E-2)**

Parameter	Units	Minimum Sampling Frequency		Required Analytical Test Method
		C-24	G <sup>(1)</sup>	
Dissolved Oxygen (DO)	mg/L & % saturation		M	
Sulfides (if DO < 5 mg/L)	mg/L		M	
pH	units		M	
Ammonia Nitrogen	mg/L & Kg/day		M	
Nitrate Nitrogen	mg/L & Kg/day		M	
Total Phosphorus <sup>(2)</sup>	mg/L & Kg/day		M	
Temperature	°C		M	
Salinity	ppt		M	
Un-ionized Ammonia	mg/L		M	

- (1) Grab samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.
- (2) Total Phosphorus. Total Phosphorus monitoring shall be conducted for one year from the effective date of this Order.

2. The Dischargers shall monitor the Marsh Effluent at E-3 as follows:

**Table E- 7. Marsh Effluent Monitoring (E-3)**

Parameter	Units	Minimum Sampling Frequency		Required Analytical Test Method
		C-24	G <sup>(1)</sup>	
Dissolved Oxygen (DO)	mg/L & % saturation		M	
Sulfides (if DO < 5 mg/L)	mg/L		M	
pH	units		M	
Ammonia Nitrogen	mg/L & Kg/day		M	
Nitrate Nitrogen	mg/L & Kg/day		M	
Total Phosphorus <sup>(2)</sup>	mg/L & Kg/day		M	
Temperature	°C		M	
Salinity	ppt		M	
All Applicable Standard Observations	Various		W	
Un-ionized Ammonia	mg/L		M	

- (1) Grab samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.
- (2) Total Phosphorus. Total Phosphorus monitoring shall be conducted for one year from the effective date of this Order.

## VII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

### A. Monitoring Location – Receiving Waters

1. The Dischargers shall monitor the receiving waters (Lower San Francisco Bay) at C-R-B and CR as follows:

**Table E- 8. Receiving Water Monitoring (C-R-B; CR)**

Parameter	Units	Minimum Sampling Frequency		Required Analytical Test Method
		C-24	G <sup>(1)</sup>	
Dissolved Oxygen (DO)	mg/L & % saturation		M	
Sulfides (if DO < 5 mg/L)	mg/L		M	
pH	units		M	

(1) Grab samples shall be collected coincident with composite samples collected for the analysis of regulated parameters.

## VIII. LEGEND FOR MRP TABLES

### Types of Samples

C-24 = 24-hour composite  
G = Grab

### Frequency of Sampling

D = Once each day  
W = Once each week  
M = Once each month  
A = Once each year  
Q = Once each calendar quarter  
(at least 2 month intervals)  
2/Y = Twice each calendar year



## IX. REPORTING REQUIREMENTS

### A. General Monitoring and Reporting Requirements

1. The Dischargers shall comply with all Standard Provisions (Attachments D and G) related to monitoring, reporting, and recordkeeping, except as otherwise specified below.

### B. Self Monitoring Reports (SMRs)

1. At any time during the term of this Order, the State or Regional Water Board may notify the Dischargers to electronically submit self-monitoring reports. Until such notification is given, the Dischargers shall submit self-monitoring reports in accordance with the requirements described below.
2. The Dischargers shall submit monthly Self Monitoring Reports including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order for each calendar month. Monthly SMRs shall be due no later than 30 days after the end of each calendar month.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	effective date of permit	All	First day of second calendar month following month of sampling
Once / day	effective date of permit	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	First day of second calendar month following month of sampling
Once / week	effective date of permit	Sunday through Saturday	First day of second calendar month following month of sampling
Once/ month	effective date of permit	1 <sup>st</sup> day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
Once / quarter	effective date of permit	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
Once / semi-annual period	effective date of permit	Wet Season: October 1 through April 30 Dry Season: May 1 to September 30	June 1 November 1
Once / year	effective date of permit	Dry Season: May 1 to September 30	November 1

4. The Dischargers shall report with each sample result the applicable Minimum Level (ML) or Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

The Dischargers shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
  - d. The Dischargers shall instruct laboratories to establish calibration standards so that the RL value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. The Dischargers shall not use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.
5. The Dischargers shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations.
  6. The Dischargers shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

7. SMRs must be submitted to the Regional Water Board, signed and certified as required by the standard provisions (Attachment D), to the address shown below:

Executive Officer  
California Regional Water Quality Control Board  
San Francisco Bay Region  
1515 Clay Street, Suite 1400  
Oakland, CA 94612  
ATTN: NPDES Permit Division

8. The Dischargers have the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The Electronic Reporting System (ERS) format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt. If there are any discrepancies between the ERS requirements and the "hard copy" requirements listed in the MRP, then the approved ERS requirements supersede.

### **C. Other Reports**

1. **Annual Reports.** By February 1<sup>st</sup> of each year, the Dischargers shall submit an annual report to the Regional Water Board covering the previous calendar year. The report shall contain the items described in Part A of the SMP, Section F.5 (Attachment G).

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## ATTACHMENT F – FACT SHEET

As described in Section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

### I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

**Table F- 1. Facility Information**

<b>WDID</b>	NPDES Permit No. CA 0038636
<b>Dischargers</b>	East Bay Regional Park District (EBRPD) Union Sanitary District (USD), and East Bay Dischargers Authority (EBDA)
<b>Name of Facility</b>	Hayward Shoreline Marsh
<b>Facility Address</b>	3010 West Winton Road
	Hayward, CA 94544
	Alameda County
<b>Facility Contact, Title, Phone</b>	David Livingston, Plant Manager, USD, (510) 477-7560
<b>Authorized Person to Sign and Submit Reports</b>	David Livingston, Plant Manager, USD, (510) 477-7560
	Neal Fujita, Water Resources Manager, EBRPD, (510) 649-3313
<b>Mailing Address</b>	5072 Benson Road
	Union City, CA 94587
<b>Billing Address</b>	Same as Mailing Address
<b>Type of Facility</b>	Marsh for Habitat Enhancement
<b>Major or Minor Facility</b>	Minor
<b>Threat to Water Quality</b>	I
<b>Complexity</b>	2B
<b>Pretreatment Program</b>	Yes
<b>Reclamation Requirements</b>	Producer
<b>Facility Average Daily Flow</b>	3-5 mgd
<b>Hayward Marsh Hydraulic Capacity</b>	20 mgd
<b>Watershed</b>	San Francisco Bay
<b>Receiving Water</b>	Lower San Francisco Bay
<b>Receiving Water Type</b>	Marine

A. East Bay Dischargers Authority (EBDA), Union Sanitary District (USD), and East Bay Regional Park District (EBRPD) (hereinafter collectively called Dischargers) are co-permittees under this permit. The USD treatment facility (Alvarado Wastewater Treatment Plant) provides secondary treatment for its average dry weather flow. A portion of the treated effluent from the wastewater treatment facility (typically 3-5 mgd), is transported via an EBDA pipeline and delivered to the Hayward Marsh at Hayward Shoreline Regional Park. EBDA owns and operates the pump station at USD and the force main which conveys USD flow to the EBDA outfall. USD owns and operates the valve located on the force main and the respective downstream pipe which conveys diverted flow from the force main to the Hayward Marsh. The EBRPD owns and operates the Hayward Marsh.

**B.** The Facility discharges wastewater to Hayward Marsh and ultimately Lower San Francisco Bay, a water of the United States, and is currently regulated by Order No. 99-024 and NPDES Permit No. CA0038636, which was adopted on May 25, 1999, and expired on May 25, 2004. Pursuant to the correspondence received from the Regional Water Board on May 20, 2004, the terms and conditions of the existing Order automatically continued in effect after the permit expiration date and until a new permit is issued.

**C.** The Dischargers filed a Report of Waste Discharge (ROWD) and submitted an application for reissuance of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on December 19, 2003.

## **II. FACILITY DESCRIPTION**

### **A. Description of Wastewater Treatment or Controls**

1. The Union Sanitary District (USD) owns and operates a municipal wastewater treatment facility, the Alvarado Wastewater Treatment Plant, which serves Fremont, Newark and Union City areas. The plant provides secondary treatment of domestic and, to a lesser extent, industrial and commercial wastewaters. The treatment consists of screening, primary sedimentation, activated sludge, secondary clarification, and chlorination/disinfection of final effluent. Sludge is anaerobically digested, dewatered using centrifuge processes, and disposed of at an authorized disposal site. Treated effluent is transported to the EBDA line where it mixes with treated effluent from other EBDA agencies and is transported to a dechlorination station near the San Leandro Marina. The treated effluent is ultimately transported to EBDA's deepwater outfall in Lower San Francisco Bay (west of the Oakland Airport). This discharge, which is the primary method by which USD discharges its' treated effluent, is regulated under a separate NPDES Permit (CA 0037869). USD is a member agency of EBDA, which is governed by a Joint Exercise of Powers Agreement (JPA). Pursuant to the JPA, 42.9 mgd is the capacity available to USD in the EBDA outfall.
2. The Hayward Marsh is a 145-acre improved marsh system including three freshwater marsh basins (85 acres – Basins 1, 2A, and 2B) and two brackish water basins (60 acres – Basins 3A and 3B) at Hayward Shoreline Regional Park, adjacent to Lower San Francisco Bay (Attachment B). Basins 1, 2A, and 2B, which are designated as part of the treatment process and are not waters of the United States, cannot become "attractive nuisances" for wildlife. Therefore, the Dischargers are required to employ best management practices in order to avoid harming the wildlife which frequents these basins.

The hydraulic capacity of the marsh system is about 20 mgd. During the past five-year period, the marsh was operated at 3 to 5 mgd with reclaimed wastewater diverted from the adjacent EBDA discharge line as the freshwater influent source. At this point of diversion, reclaimed wastewater is supplied by USD. This discharge is classified as a minor discharge since USD's primary discharge to the EBDA outfall is classified as a major discharge and the discharge to the marsh is intermittent on a diurnal and seasonal basis. Tidal saline water also enters into the brackish water basins of the marsh system.



3. Although a portion of USD's treated effluent is transported to Hayward Marsh, the diversion of treated effluent to the Marsh does not result in an overall increase in the volume that USD discharges, nor does it result in an additional pollutant loading to Lower San Francisco Bay than would occur if USD conveyed this same flow to the EBDA outfall.

After mixing with Bay water in the brackish water basins, Basins 3A and 3B, reclaimed wastewater from the marsh system is discharged directly into Lower San Francisco Bay through an earthen channel (Attachment C). Basins 3A and 3B and Lower San Francisco Bay are waters of the United States within the San Francisco Bay Watershed.

4. Originally part of a natural tidelands area, the marsh site was destroyed in the 19<sup>th</sup> century when a dike was created to impede tidal action and allow the area to be used for salt evaporation ponds. Commercial salt production ceased during the 1940's, and the area remained in an unused, degraded condition. During the 1970's, the Hayward Area Shoreline Planning Agency (HASPA) was formed to implement plans for restoring the shoreline area. The restoration work was divided into two phases and completed in the early 1980's.

The second phase, Hayward Marsh, involved construction of 145 acres of fresh and brackish marshes. Funded by U.S. Fish & Wildlife, City of Hayward and a grant from the State Coastal Conservancy, Hayward Marsh was specifically designed to utilize reclaimed wastewater. In 1983, EBDA entered into an agreement with the EBRPD for operation and maintenance of the marsh. A key component of this agreement was that EBDA would supply up to 20 mgd of secondary treated wastewater as the freshwater source for the marsh. In 1988 the first NPDES permit was obtained and USD and EBDA began supplying effluent to the Hayward Marsh.

5. The Hayward Marsh is operated to enhance the beneficial uses of reclaimed wastewater, to derive net environmental benefits, and as a research site to better understand development and management of a marsh utilizing reclaimed wastewater. Hayward Marsh was previously subject to the provisions of Regional Water Board Resolution No. 77-1 and was deemed to be covered under Resolution 94-086 provided that the management plan was updated. The net environmental benefits are described as follows:
  - i. Regular monitoring indicates that avian species diversity has increased steadily in the study area since bird censuses commenced in 1990. The marsh supports a great density of wintering waterfowl, numbering as high as 40,000 ducks each season, and is an important migratory stopover for shorebirds each Spring and Fall. At least 200 species of birds have utilized the marsh. There has also been a trend toward relatively greater numbers of water bird species over land birds, which may be attributable to improved wetland habitat management. The avian diversity and density attracts researchers, recreational bird watchers, and organized environmental groups who visit the marsh regularly.

- ii. The marsh is a refuge for nesting shorebirds and waterfowl and provides important nesting habitat for over 25 species of birds with active nests initiated as early as March and continuing into September each year. This represents a substantial regional nesting population for waterfowl and shorebirds and also represents one of the largest colonies of nesting snowy egrets and black-crowned night herons in Lower San Francisco Bay.
  - a. The unique complex of islands within the Hayward Marsh protects hundreds of ground nesting birds from predation by mainland based predators. The islands annually support an average of 500 nesting pairs of birds.
  - b. For the past four years, the annual waterfowl production has averaged 180 nests per year. The presence of waterfowl year round provides foraging opportunities for many raptors including peregrine falcons, a state endangered species, and Cooper's hawks and northern harriers, which are species of special concern.
- iii. Several bird species of special interest including the Forster's tern, Caspian tern, black skimmers and the federally threatened Western snowy plover nest within the Marsh.
  - a. Hayward Marsh islands support nesting Forster's tern. Under optimal conditions, hundreds of terns have nested on several islands within the marsh. The population of terns has experienced some of the greatest reproductive success of terns nesting throughout the San Francisco Bay Estuary.
  - b. Several islands at Hayward Regional Shoreline have been identified as priority locations for Caspian tern habitat enhancement. Enhancing and managing the islands is critical for assuring adequate distribution of nesting colonies of Caspian terns within the Pacific Rim.
  - c. The black skimmer nests on islands within the marsh. The black skimmer has nested at Hayward Regional Shoreline, which represents the northern-most, known nesting locations for this species along the Pacific Coast.
- iv. The California least tern, a federal and state endangered species, nested successfully on an island within the marsh complex in 1990. In order to support the California least tern, tern habitat is being enhanced within the marsh with over 15,000 square feet of new nesting habitat being created. The habitat area has been created with the assistance of more than 2,000 volunteers who donated over 6,000 hours of volunteer service. During the spring of 2005, eight (8) pairs of California least terns attempted to nest on the enhanced nesting area and several more pairs were observed prospecting for nest sites. Establishing a viable California least tern colony is of regional significance because there is only one other nesting colony within San Francisco Bay.
- v. The Marsh Shoreline discharge creates a salinity transition zone that provides suitable and attractive habitat for rearing of juvenile bay fish. A 1991 California State University, Hayward study demonstrated a 400% increase in 12 species of

juvenile bay fish in the transition habitat compared to more saline areas of the Bay nearby.

An October 2005 aquatic survey indicated that top smelt, *Atherinops affinis*, and rainwater killifish, *Lucania parva*, were present in abundance. Both are euryhaline species predominantly found in saltwater but also inhabit the lower reaches of coastal streams and upper estuaries where salinities vary from freshwater to brackish. Estuaries, such as Hayward Marsh are often used for spawning and as a nursery area for the young of the year for both species. The top smelt sampled are primarily young of the year fish that were likely to have been spawned in this location. The fish within the Marsh are important because the black skimmer, Caspian, Forster's and California least terns forage on small fish that inhabit the waters within the marsh complex.

- vi. Hayward Marsh provides many on-site educational and interpretive opportunities for local schools and citizens. The Hayward Area Recreation and Parks District operates the Hayward Shoreline Interpretive Center which specializes in educational programs on wetlands, shoreline habitats and the ecology of the San Francisco Bay and offers interpretive programs year-round. The educational benefits provided by the Interpretive Center include the following:
  - a. Approximately 20,000 students and public visitors annually attend programs offered by the Hayward Interpretive Center.
  - b. In order to educate visitors regarding the unique freshwater aspects of the Hayward Marsh, the Interpretive Center developed a new program in 2001 called "Wetland Ecology". The program focuses on the study of freshwater marshes compared to salt water marshes and open bays. In addition to the general public, this program has also targeted elementary and middle school classes.
- vii. The Hayward Marsh complex serves as a model for illustrating the effectiveness of using freshwater for wetland enhancement. Several university campuses, including the University of California at Berkeley and San Francisco State University, conduct field trips highlighting the success of this wetland enhancement. In addition, in any given year, 3-5 research permits are issued for independent projects at the Hayward Regional Shoreline. These projects are initiated by agencies, organizations, or educational institutions.
- viii. Hayward Marsh has considerable value as a wetland restoration demonstration site for local, national and international scientists, academics, consultants, engineers, planners, politicians, delegates and other professionals. Visitors from as far as South Korea, Russia, Japan, China, Vietnam and Taiwan have come to tour the Hayward Marsh system and learn about the concept, design, and operation and maintenance.

#### **B. Discharge Points and Receiving Waters**

The location of the Hayward Marsh outfall and its receiving water are shown in Table F-2 below.

**Table F- 2. Outfall Location**

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
E-3	POTW Effluent	37 ° , 37' , 32" N	122 ° , 07' , 50" W	Lower San Francisco Bay

The Lower San Francisco Bay is located in the South Bay Basin watershed management area, between the Dumbarton Bridge and the San Francisco-Oakland Bay Bridge.

### C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations contained in the previous permit (Order No. 99-024) for discharges to the Hayward Marsh and representative monitoring data from the term of the previous permit are as follows.

**Table F- 3. Historic Conventional Substances Effluent Limitations and Monitoring Data (E-1)**

Parameter	(units)	Effluent Limitations			Monitoring Data (From 1/00 To 8/05)		
		Monthly Average	Weekly Average	Instantaneous Maximum	Highest Monthly Average	Highest Weekly Average	Highest Inst. Max
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	30	45	--	25	32	----
Total Suspended Solids	mg/L	30	45	--	28	35	----
Settleable Matter	ml/L-hr	0.1	--	0.2	<0.1	----	<0.1
Total Chlorine Residual*	mg/L	--	--	0.0	----	----	0.0

\* As measured at E-1-D Basin

**Table F- 4. Historic Toxic Substances Effluent Limitations and Monitoring Data (Avg. 2AE/2BE)**

Parameter	Units	Water Quality-Based Effluent Limits (WQBELs)		Interim Limits		Monitoring Data (From 1/00 To 8/05)
		Daily Average	Monthly Average	Daily Average	Monthly Average	Highest Daily Average
Arsenic	µg/L	36	---	---	---	3.75
Copper	µg/L	4.9	---	17	---	7.72
Mercury	µg/L	0.025	---	0.14	---	0.03
Lead	µg/L	5.6	---	---	---	5.55
Nickel	µg/L	8.3	---	43	---	24.50
Silver	µg/L	2.3	---	---	---	0.25
Selenium	µg/L	5	---	---	---	0.50
Zinc	µg/L	86	---	---	---	59.90
Cyanide	µg/L	5	---	17.1	---	8.80
PAHs	µg/L	15	---	---	---	<0.062

**Footnotes**

<sup>(1)</sup> Mean Discharge values include Non-detected and Detected but Not Quantified (DNQ) values in the computation.

## D. Compliance Summary

### 1. Compliance with Numeric Effluent Limits.

No exceedances of the effluent limits were observed during the permit term. Overall, the Dischargers had a very strong record of compliance over the last five years.

### 2. Compliance with Permit Provisions.

A list of special activities required in the provisions for Order No. 99-024, and the status of completion, is shown in Table F-5 below.

**Table F- 5. Status of Special Activities in Provisions for Order No. 99-024**

Provision No.	Description of Activity	Status of Completion
3	Copper Reduction Study-- USD completed an evaluation of its local discharge limits for dischargers in its' service area. Most of the significant sources of copper in USD's wastewater have been identified and are controlled or have been eliminated through permitting, pollution prevention, and the use of best management practices. One of the major findings was that copper in wastewater from residential sources accounted for approximately 70 percent of the annual average copper loading to the Alvarado Treatment Plant. It was later found that the Alameda County Water District (ACWD) water was corrosive to copper piping. As a result, ACWD implemented an optimal corrosion control program in 1999.	Completed in 2000
4	Copper Translator Study - The District completed a copper and nickel translator study and is participating in the on-going Bay North of Dumbarton Bridge Copper/Nickel Study to assist in identifying the most appropriate point of application for a metals translator , and the most appropriate site specific objective to be translated into future effluent limits.	Completed in 2002
5	Mercury Reduction Study -USD completed a comprehensive study to identify sources of mercury and estimate the amount of mercury per source. The District's Pollution Prevention Program addressed mercury by developing and implementing a plan and corresponding time schedule. The sources of mercury identified included laboratories, hospitals, dental offices, human waste, food waste, industrial processes, stormwater inflow, and other miscellaneous activities. Of the sources identified, dental offices were, by far, the largest source.	Completed in 2001
8	Nickel Translator Study- See the Copper Translator Study summary.	Completed in 2002
9	Unionized Ammonia Study-The Dischargers are required to monitor total ammonia and unionized ammonia monthly on a year-round basis for both	Ongoing

	Marsh effluent at 3A and 3B and receiving water after Marsh discharge E-2. This is an ongoing monitoring requirement.	
10	Acute Toxicity Effluent Study - The report presents the test results of four sampling events which cover both wet and dry seasons (April – Sep 2003). The test was conducted by measuring survival of atherinops affinis exposed to undiluted receiving water samples for 96 hours in a static renewal test process. The results showed more than 70% survival rate for each test.	Completed in 2002

### 3. Compliance with Submittal of Self-Monitoring Reports.

The Dischargers submitted all Self-Monitoring Reports on or before the due date during the term of Order No. 99-024.

## III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities described in this section.

### A. Legal Authorities

This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as an NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under CWA section 402.

### B. California Environmental Quality Act (CEQA)

This action to reissue an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.

### C. State and Federal Regulations, Policies, and Plans

#### 1. Water Quality Control Plans

The Regional Water Board adopted a Water Quality Control Plan for the San Francisco Bay Basin (revised in 2005) (hereinafter Basin Plan) that designates beneficial uses, establishes WQOs, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Beneficial uses applicable to Lower San Francisco Bay are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
E-3	Lower San Francisco Bay	Industrial Service Supply (IND), Navigation (NAV), Water Contact Recreation (REC1), Non-contact Water Recreation (REC2), Ocean Commercial and Sport Fishing (COMM), Wildlife Habitat (WILD), Preservation of Rare and Endangered Species (RARE), Fish Migration (MIGR), Shellfish Harvesting (SHELL), Estuarine Habitat (EST)

The Basin Plan does not identify beneficial uses for Hayward Marsh, which is surrounded by channels and moats, and not contiguous with other wetlands. For small noncontiguous wetlands, the Basin Plan indicates that it will not be practical to delineate and specify beneficial uses for each one individually, and therefore, beneficial uses may be determined site-specifically, as needed. At this time, public access is restricted by a fence that surrounds nearly all of Hayward Marsh. The fenced areas also include signs that alert the public to the use of recycled wastewater. In other areas, the public would need to traverse channels and moats to reach areas that receive recycled wastewater. There is only one exception and that is the discharge channel from Hayward Marsh to the Bay. To address potential public access in this area, this Order requires the Dischargers to post additional signs. Since these restrictions effectively prevent public access to Hayward Marsh, this Order does not identify beneficial uses of Hayward Marsh as water contact recreation or shellfish harvesting. In order for the Water Board to designate beneficial uses for Hayward Marsh in a future Basin Plan amendment, this Order requires the Dischargers to provide information that will enable the Regional Water Board to conduct a use attainability analysis.

- a. The Basin Plan (Table 4-1) contains a prohibition of discharge of “any wastewater which has particular constituents of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1; or into any non-tidal water, dead-end slough, similar confined waters, or immediate tributaries thereof”. The Basin Plan also states that an exception to this prohibition will be considered for Dischargers where the discharge is approved as a part of a reclamation project, or where “it can be demonstrated that net environmental benefits will be derived as a result of the discharge”. In order to, in part, address these types of discharges, the Regional Water Board adopted Resolution 94-086 entitled “Policy on the Use of Wastewater to Create, Restore, and/or Enhance Wetlands.”

In issuing the previous Order, the Regional Water Board determined that, pursuant to the Basin Plan and Resolution 94-086, the Dischargers are exempt from the discharge prohibition for not receiving at least 10:1 dilution since the use of treated effluent as a freshwater source to Hayward Marsh has a demonstrated net environmental benefit, provided the Dischargers continue to meet the terms and conditions of the Order. For this Order, the Regional Water Board continues this finding. This is because this Order establishes limits for priority pollutants that have the potential to threaten water quality, and requires that the Dischargers ensure that the brackish basins meet water quality objectives in the Basin Plan.

- b. The Basin Plan requires that effluent limitations for Total Coliform for shallow water discharges in the immediate vicinity of public contact or shellfish harvesting are required

to be 240 MPN/100mL as a daily maximum and 2.2 MPN/100 mL as a seven-sample median (Basin Plan Table 4-2). Exceptions to these limitations may be granted by the Regional Water Board where it is demonstrated that beneficial uses will not be compromised by such an exception.

From July 1994 through June 1995, the Dischargers studied the effect of reduced chlorine residual on fecal coliform numbers in the effluent and receiving waters in Lower San Francisco Bay. The information contained in their report, "Justification for Fecal Coliform Effluent Limitation," indicated that there are no negative impacts on the receiving waters due to the reduction of chlorine residual and subsequent increase in the fecal coliform numbers in the effluent. The report concluded that the receiving waters in the vicinity of the EBDA outfall are not used for water contact recreation and that five day log mean fecal coliform density up to 500 MPN/100 mL, and 90<sup>th</sup> percentile fecal coliform value of up to 1100 MPN/100 mL in the effluent will be protective of the beneficial uses of the receiving waters. Receiving water monitoring data showed that the fecal coliform density in the receiving water was generally less than 2.0 MPN/100 mL when the effluent was discharged with a fecal coliform density of 500 MPN/100 mL. However, the EBDA outfall includes a diffuser that is 23.5 below the water surface, achieves a dilution of at least 10:1 at all times, and is about eight miles northwest from where the Hayward Marsh would enter Lower San Francisco Bay. As the receiving water conditions in this area are different from where the study was conducted, this Order includes a provision that requires the Dischargers to confirm that beneficial uses of shellfish harvesting and water contact recreation are met in the immediate vicinity of where Hayward Shoreline Marsh discharges to Lower San Francisco Bay.

In issuing the previous Order, the Regional Water Board determined that, pursuant to the Basin Plan, an exception to the Total Coliform effluent limitations was granted for the discharge to Hayward Marsh since it is a wetland enhancement project, is not used for water contact recreation, and the alternative effluent limit will be protective of the beneficial uses of the receiving waters. For this Order, the Regional Water Board continues this finding provided the Dischargers document that the fecal coliform effluent limitations are protective of the beneficial uses in Lower San Francisco Bay.

## **2. Thermal Plan**

The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains WQOs for coastal and interstate surface waters as well as enclosed bays and estuaries.

## **3. National Toxics Rule (NTR) and California Toxics Rule (CTR)**

USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995, and November 9, 1999, and the CTR on May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria (WQC) for priority pollutants and are applicable to this discharge.



**4. State Implementation Policy**

On March 2, 2000, State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The State Water Board amended the SIP on February 24, 2005, and the amendments became effective on May 31, 2005. The SIP includes procedures for determining the need for and calculating water quality-based effluent limitations (WQBELs), and requires the Dischargers to submit data sufficient to do so.

**5. Antidegradation Policy**

Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the Federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16, which incorporates the requirements of the Federal antidegradation policy. Resolution 68-16 requires that existing water quality is maintained unless degradation is justified based on specific findings. The permitted discharge is consistent with the antidegradation provision of 40 CFR §131.12 and State Water Board Resolution 68-16, and the final limitations in this Order are in compliance with antidegradation requirements and meet the requirements of the SIP because these limits hold the Dischargers to performance levels that will not cause or contribute to water quality impairment or further water quality degradation.

**6. Anti-Backsliding Requirements**

Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR §122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. In this Order, all effluent limitations are at least as stringent as those in the previous Order.

**7. Monitoring and Reporting Requirements**

Section 122.48 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement Federal and State requirements. This MRP is provided in Attachment E of this Order. The MRP may be amended by the Executive Officer pursuant to USEPA regulation 40 CFR 122.62, 122.63, and 124.5.

**8. Federal Water Pollution Control Act.**

Water quality objectives (WQOs) and water quality criteria (WQC), effluent limitations, and calculations contained in this Order are also based on Sections 201 through 305, and 307 of The Federal Water Pollution Control Act, and amendments thereto, as applicable.

## **D. Impaired Water Bodies on CWA 303(d) List**

On June 6, 2003, the USEPA approved a revised list of impaired water bodies prepared by the State (hereinafter referred to as the 303(d) list), prepared pursuant to provisions of Section 303(d) of the Federal CWA requiring identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Lower San Francisco Bay is listed as an impaired waterbody. The pollutants impairing Lower San Francisco Bay include chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, PCBs, dioxin-like PCBs, and selenium. The SIP requires final effluent limitations for all 303(d)-listed pollutants to be based on total maximum daily loads and associated waste load allocations.

### **1. Total Maximum Daily Loads**

The Regional Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list in Lower San Francisco Bay within the next ten years. Future review of the 303(d)-list for Lower San Francisco Bay may result in revision of the schedules or provide schedules for other pollutants.

### **2. Waste Load Allocations**

The TMDLs will establish waste load allocations (WLAs) for point sources and load allocations (LAs) for non-point sources, and will result in achieving the water quality standards for the waterbodies. Final WQBELs for 303(d)-listed pollutants in this discharge will be based on WLAs contained in the respective TMDLs.

### **3. Implementation Strategy**

The Regional Water Board's strategy to collect water quality data and to develop TMDLs is summarized below:

- a. Data Collection.** The Regional Water Board has given the dischargers the option to collectively assist in developing and implementing analytical techniques capable of detecting 303(d)-listed pollutants to at least their respective levels of concern or WQOs/WQC. This collective effort may include development of sample concentration techniques for approval by the USEPA. The Regional Water Board will require dischargers to characterize the pollutant loads from their facilities into the water-quality limited waterbodies. The results will be used in the development of TMDLs, and may be used to update or revise the 303(d) list or change the WQOs/WQC for the impaired waterbodies including Lower San Francisco Bay.
- b. Funding Mechanism.** The Regional Water Board has received, and anticipates continuing to receive, resources from Federal and State agencies for TMDL development. To ensure timely development of TMDLs, the Regional Water Board intends to supplement these resources by allocating development costs among dischargers through the RMP or other appropriate funding mechanisms.

#### IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations; and other requirements in NPDES permits. There are two principal bases for effluent limitations: 1) 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards; and 2) 40 CFR §122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, three options exist to protect water quality: 1) 40 CFR §122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a); 2) proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information may be used; or 3) an indicator parameter may be established.

This Order contains restrictions on individual pollutants that are no more stringent than required by the Federal Clean Water Act. Individual pollutant restrictions consist of water quality-based effluent limitations that have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to Federal law and are the applicable Federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the California Toxics Rule, the California Toxics Rule is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the CTR-SIP, which was approved by USEPA prior to May 1, 2001, or Basin Plan provisions approved by USEPA on May 29, 2000. Most beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the [Clean Water] Act" pursuant to 40 CFR 131.21(c)(1). The remaining water quality objectives and beneficial uses implemented by this Order were approved by USEPA on January 5, 2005, and are applicable water quality standards pursuant to 40 CFR 131.21(c)(2). Collectively, this Order's restrictions on individual pollutants are no more stringent than the applicable water quality standards for purposes of the Clean Water Act.

Several specific factors affecting the development of limitations and requirements in this Order are discussed as follows:

##### A. Discharge Prohibitions

1. **Prohibition III.A (No discharge other than described in this order).** This prohibition is the same as in the previous permit and is based on California Water Code (CWC) Section 13260 that requires filing of a ROWD before a permit to discharge can be granted. The Dischargers submitted a ROWD, dated December 19, 2003, for permission to discharge as specified in this permit, thus any discharges other than as described in this Order are prohibited.
2. **Prohibition III.B. (No creation of nuisance).** This prohibition is the same as in the previous permit, and is based on CWC Section 13030(m), which describes the specific conditions which

constitute a nuisance condition. The Dischargers are required to have a Marsh Management Plan as well as a Marsh Contingency Plan, both of which include activities related to preventing a nuisance.

## **B. Technology-based Effluent Limitations**

The Code of Federal Regulations (CFR) at 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards. This Order includes technology-based effluent limitations based on Secondary Treatment Standards at 40 CFR Part 133. Permit effluent limitations for conventional pollutants are technology-based. Technology-based effluent limitations are put in place to ensure that full secondary treatment is achieved by the wastewater treatment facility, as required under 40 CFR Part 133.102. Effluent limitations for these conventional pollutants are defined by the Basin Plan. Further, these conventional effluent limits are the same as those from the previous permit for the following constituents:

- Biochemical oxygen demand (BOD)
- Total suspended solids
- Chlorine residual

The settleable solids effluent limitations are no longer required per the 2004 Basin Plan amendment.

### **1. Scope and Authority**

Regulations promulgated in 40 CFR §125.3(a)(1) require technology-based effluent limitations for municipal dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in Section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator. Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), and pH.

- a. Biochemical Oxygen Demand.** This effluent limitation is unchanged from the previous permit, and is based on the Basin Plan (Chapter 4, Table 4-2).
- b. Total Suspended Solids.** This effluent limitation is unchanged from the previous permit, and is based on the Basin Plan (Chapter 4, Table 4-2).
- c. Total Chlorine Residual.** This effluent limitation is unchanged from the previous permit, and is based on the Basin Plan (Chapter 4, Table 4-2).

- d. pH.** This effluent limitation is unchanged from the previous permit, and is based on the Basin Plan (Chapter 4, Table 4-2).

## 2. Applicable Technology-Based Effluent Limitations

### Summary of Technology-based Effluent Limitations Discharge Point E-1

#### a. Conventional Pollutants

Table F- 6. Conventional Substances Effluent Limitations

Parameter	Units	Effluent Limitations			
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	30	45	---	---
Total Suspended Solids	mg/L	30	45	---	---
Total Chlorine Residual <sup>(1,2)</sup>	mg/L	---	---	---	0.0

<sup>(1)</sup> The discharge shall maintain compliance with the effluent limitations at E-1-D.

<sup>(2)</sup> Requirement defined as below the limit of detection in standard test methods defined in the latest edition of *Standard Methods for the Examination of Water and Wastewater*. Due to the remote location of Basin 1, the samples are collected by grab samples and tested on-site using approved test kits. If the Dischargers elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfite (or other dechlorinating chemical) dosage (including a safety factor) and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Regional Water Board staff may conclude that these false positive chlorine residual exceedances are not violations of this permit limitation.

**b. pH:** The pH of the discharge shall not exceed 8.5 nor be less than 6.5.

If the Dischargers employ continuous pH monitoring, the Dischargers shall be in compliance with the pH limitation specified herein, provided that both of the following conditions are satisfied:

- The total time during which the pH values are outside the required range shall not exceed 7 hours and 26 minutes in any calendar month.
- No individual excursion from the required range of pH values shall exceed 60 minutes.

**c. Fecal Coliform Bacteria:** The effluent shall not exceed a five-day log mean fecal coliform density of 500 MPN/100 mL and a ninetyeth percentile value of 1,100 MPN/100mL.

## C. Water Quality-Based Effluent Limitations (WQBELs)

### 1. Scope and Authority

- a. As specified in 40 CFR §122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard (Reasonable Potential). The process for determining Reasonable Potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other State plans and policies, or water quality criteria contained in the CTR and NTR.
- b. NPDES regulations and the SIP provide the basis to establish Maximum Daily Effluent Limitations (MDELs).
  - 1) **NPDES Regulations.** NPDES regulations at 40 CFR Part 122.45(d) state:  
“For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works.”
  - 2) **SIP.** The SIP (page 8, Section 1.4) requires WQBELs be expressed as MDELs and average monthly effluent limitations (AMELs).
- c. MDELs are used in this Order to protect against acute water quality effects. The MDELs are necessary for preventing fish kills or mortality to aquatic organisms.

### 2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The WQC and WQOs applicable to the receiving waters for this discharge are from the Basin Plan, the USEPA's May 18, 2000 Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California (the California Toxics Rule, or the CTR), and the USEPA's National Toxics Rule (the NTR).

- a. **Basin Plan.** The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper in freshwater, lead, mercury, nickel, silver, zinc, and cyanide (see also c., below). The narrative toxicity objective states in part “[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.” The bioaccumulation objective states in part “[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.” Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.

- b. **CTR.** The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries such as here, except that where the Basin Plan's Tables 3-3 and 3-4 specify numeric objectives for certain of these priority toxic pollutants, the Basin Plan's numeric objectives apply over the CTR (except in the South Bay south of the Dumbarton Bridge).
- c. **NTR.** The NTR established numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to, and including, Suisun Bay and the Delta. This includes the receiving water for these Dischargers.
- d. **Technical Support Document for Water Quality-Based Toxics Controls.** Where numeric objectives have not been established or updated in the Basin Plan, 40 CFR Part 122.44(d) specifies that WQBELs may be set based on USEPA criteria, supplemented where necessary by other relevant information, to attain and maintain narrative WQOs to fully protect designated beneficial uses. Regional Water Board staff used best professional judgment (BPJ) to determine the WQOs, WQCs, WQBELs, and calculations contained in this Order as defined by USEPA's March 1991 Technical Support Document for Water Quality-Based Toxics Control (the TSD).
- e. **Basin Plan Receiving Water Salinity Policy.** The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQC. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria, (the latter calculated based on ambient hardness), for each substance.
  - 1) **Receiving Water Salinity.** The Dischargers collected salinity samples from Basins 3A, 3B, and location E-3 twice/month since 2000. These data show that Basin 3A is classified as estuarine, and location E-3 and Basin 3B are classified as saltwater. To be conservative, the effluent limitations specified in this Order are based on the most stringent of freshwater or saltwater WQOs and WQC of the Basin Plan, CTR, and NTR.
- f. **Shallow Water Discharge.** Discharge to the Hayward Marsh is into shallow water. Due to the tidal nature of the Marsh, the discharge is classified by the Board as a shallow water discharge. Therefore, effluent limitations are calculated assuming no dilution. This is also consistent with the previous permit.

The 1995 Basin Plan states that shallow water dischargers may apply to the Regional Water Board for exceptions to shallow water designations based on demonstration of compliance with water quality objectives in the receiving waters and implementation of an aggressive pretreatment and source control program. The Basin Plan Shallow Water



Discharges section specifies the issues that must be addressed to support requests for the Regional Water Board to consider granting limited dilution credit where needed to meet effluent limits in the form of revised effluent or mass loading limits.

- g. Site-Specific Metals Translators.** The CTR and the Basin Plan establish aquatic life- and human health-based water quality criteria. The water quality criteria are typical values based on default site conditions and assumptions. However, site-specific conditions such as water temperature, pH, hardness, concentrations of metal binding sites, particulates organic carbon, dissolved organic carbon, and concentrations of other chemicals can greatly impact the chemical toxicity. The purpose of a translator is to adjust these default assumptions for varying site-specific conditions to prevent exceedingly stringent or under protective water quality objectives.

The Basin Plan WQOs are expressed in the total recoverable form of the metal. The CTR conversion factors are used to convert the total Basin Plan WQOs to dissolved values. The CTR conversion factors are derived under the same laboratory conditions under which the WQOs were developed. Therefore, it is appropriate to use the CTR conversion factors to convert the Basin Plan WQOs. Site-specific translators were used to convert the dissolved Basin Plan WQOs back to total values.

The San Francisco Estuary Institute (SFEI), in collaboration with the Regional Water Board and the regulated discharger community, conducts the RMP, which evaluates chemical contamination patterns and trends in San Francisco Bay and its tributary water bodies. Under this program, SFEI collects water samples approximately three times per year at various monitoring stations throughout the San Francisco Bay region. SFEI has collected data for total and dissolved trace metals at the Alameda RMP station (BB70) since 1994.

For the purposes of the Hayward Marsh Metal Translator Study, Union Sanitary District collected samples at several locations within the Hayward Marsh eight times between September 2000 and December 2001. The sample locations included Hayward Marsh stations 3A and 3B and in the Bay near the marsh discharge. The stations 3A and 3B were sampled as 1:1 composites, and then mixed with Bay water at a ratio of 1:5. Since only eight data points were available from the Hayward Marsh, twelve additional data points were used from the Alameda RMP station. Total and dissolved data for copper and nickel as well as TSS are presented in Table F-7 below.

**Table F- 7. Monitoring Data at Hayward Marsh and Alameda RMP Station (BB70) for Copper and Nickel**

Date	Total Suspended Solids (mg/L)	Copper (ug/L)		Nickel (ug/L)	
		Total	Dissolved	Total	Dissolved
Hayward Marsh Data					
9/21/2000	66.0	4.3	2.0	8.2	4.7
9/28/2000	50.0	4.5	2.5	5.8	3.4
2/15/2001	31.0	3.6	1.9	7.7	4.6
2/22/2001	85.5	3.2	2.8	5.3	3.4
9/20/2001	29.3	4.8	3.9	14.0	12.0

Date	Total Suspended Solids (mg/L)	Copper (ug/L)		Nickel (ug/L)	
		Total	Dissolved	Total	Dissolved
10/11/2001	52.7	3.7	2.1	18.0	12.0
11/15/2001	13.0	2.1	1.3	3.0	2.2
12/11/2001	110.0	4.6	1.4	6.6	2.3
Alameda RMP Station Data					
1/23/97	7.1	2.09	1.68	2.44	1.69
7/30/97	6.5	1.71	1.64	3.09	1.53
1/29/98	17.0	1.88	1.15	2.88	1.41
4/20/98	4.4	1.67	1.46	1.63	1.26
7/22/98	1.4	1.19	1.02	1.41	1.07
2/04/99	11.1	1.88	1.01	2.57	1.13
4/14/99	55.7	3.02	0.99	5.70	0.99
7/16/99	26.2	2.57	1.55	3.47	1.54
2/04/00	14.9	1.90	1.03	2.48	1.26
7/14/00	3.0	1.70	1.16	2.24	1.32
2/08/01	18.1	2.60	0.98	4.32	1.08
8/03/01	13.6	2.72	1.73	3.01	1.78

A regression analysis indicated that the copper and nickel dissolved fractions are not correlated with TSS. The dissolved fractions for each of these constituents are lognormally distributed and a statistical analysis resulted in the translators presented in Table F-8.

**Table F- 8. Site-Specific Metals Translators**

Constituent	Sample Size	Chronic Translator	Acute Translator
Copper	20	0.599	0.940
Nickel	20	0.527	0.884

The Hayward Marsh and Alameda RMP station calculated translators indicate that the USEPA default conversion factors are overly-protective of aquatic life.

#### **h. Interim Limitations and Compliance Schedules**

- 1) Pursuant to Section 2.1.1 of the SIP, “the compliance schedule provisions for the development and adoption of a TMDL only apply when: (a) the Dischargers request and demonstrates that it is infeasible for the Dischargers to achieve immediate compliance with a CTR criterion; and (b) the Dischargers have made appropriate commitments to support and expedite the development of the TMDL. In determining appropriate commitments, the Regional Water Board should consider the Dischargers’ contribution to current loadings and the Dischargers’ ability to participate in TMDL development.” As further described in a finding below, the Dischargers have requested and demonstrated that it is infeasible to achieve immediate compliance for mercury. Also, the Dischargers have agreed to assist the Regional Water Board in TMDL development through its affiliation with BACWA. The Regional Water Board adopted Resolution No. 01-103, on September 19, 2001, with BACWA, and other parties to accelerate the development of Water Quality Attainment Strategies including the TMDLs for the San Francisco Bay-Delta and its tributaries.

- 2) The SIP and the Basin Plan authorize compliance schedules in a permit if an existing Discharger cannot immediately comply with a new and more stringent effluent limitation. Compliance schedules for limitations derived from CTR or the NTR WQC are based on Section 2.2 of the SIP, and compliance schedules for limitations derived from Basin Plan WQOs are based on the Basin Plan. Both the SIP and the Basin Plan require the Dischargers to demonstrate the infeasibility of achieving immediate compliance with the new limitation to qualify for a compliance schedule.

The SIP and Basin Plan require the following documentation to be submitted to the Regional Water Board to support a finding of infeasibility:

- Descriptions of diligent efforts the Dischargers have made to quantify pollutant levels in the discharge, sources of the pollutant in the waste stream, and the results of those efforts.
- Descriptions of source control and/or pollutant minimization efforts currently under way or completed.
- A proposed schedule for additional or future source control measures, pollutant minimization, or waste treatment.
- A demonstration that the proposed schedule is as short as practicable.

The Basin Plan provides for a 10-year compliance schedule to implement measures to comply with new standards as of the effective date of those standards. This provision applies to the objectives adopted in the 2004 Basin Plan Amendment. Additionally, the provision authorizes compliance schedules for new interpretations of other existing standards if the new interpretation results in more stringent limitations.

- 3) On January 19, 2006, the Dischargers submitted a feasibility study (the 2006 Feasibility Study), asserting it is infeasible to immediately comply with the WQBELs, calculated according to SIP Section 1.4, for copper, mercury, nickel and cyanide. Based on these analyses, the Regional Water Board concurs that it is infeasible to achieve immediate compliance for these pollutants.
- 4) The interim limitations for copper and cyanide shall remain in effect until May 17, 2010, and nickel until April 27, 2010, or until the Regional Water Board amends the limitation(s) based on site-specific objectives (SSOs). The interim limitation for mercury will remain in effect until April 27, 2010, or until the Regional Water Board adopts a TMDL-based effluent limitation for mercury.
- 5) This Order establishes a compliance schedule that extends beyond one year for copper, mercury, nickel and cyanide. Pursuant to the SIP and 40 CFR 122.47, the Regional Water Board shall establish interim numeric limitations and interim requirements to control this pollutant. This Order establishes interim limitations for copper, mercury, nickel and cyanide based on the previous permit limitation and existing performance. This Order also establishes interim requirements in a provision

for development and/or improvement of a Pollution Prevention and Minimization Program to reduce pollutant loadings to the plant, and for submittal of annual reports on this Program.

In addition to an interim copper, mercury, nickel and cyanide concentration limitation, this Order establishes an interim performance-based mass limitation to maintain the Dischargers' current mass loadings of mercury into Lower San Francisco Bay. Mercury is a 303(d)-listed bioaccumulative pollutant. The interim performance-based mass limitation is retained from the previous permit.

**3. Determining the Need for WQBELs**

Title 40 CFR Part 122.44(d) (1) (i) requires permits to include WQBELs for all pollutants (non-priority or priority) "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any narrative or numeric criteria within a State water quality standard" (have Reasonable Potential). Thus, assessing whether a pollutant has Reasonable Potential is the fundamental step in determining whether or not a WQBEL is required. For non-priority pollutants, Regional Water Board staff used available monitoring data, receiving water's designated uses, and/or previous permit pollutant limitations to determine Reasonable Potential as described in Sections 3.a. and 3.b. below. For priority pollutants, Regional Water Board staff used the methods prescribed in Section 1.3 of the SIP to determine if the discharge from Discharge Point 001 demonstrates Reasonable Potential as described below in sections 3.c – 3.h.

**a. Reasonable Potential Analysis**

Using the methods prescribed in Section 1.3 of the SIP, Regional Water Board staff analyzed the effluent data to determine if the discharge from the composite of 2AE/2BE demonstrates Reasonable Potential. The Reasonable Potential Analysis (RPA) compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC from the USEPA, the NTR, and the CTR. The Basin Plan objectives and CTR criteria are shown in Appendix A of this Fact Sheet.

**b. Reasonable Potential Methodology**

Using the methods and procedures prescribed in Section 1.3 of the SIP, Regional Water Board staff analyzed the effluent and background data and the nature of facility operations to determine if the discharge has reasonable potential to cause or contribute to exceedances of applicable SSOs or WQC. Appendix A of this Fact Sheet shows the stepwise process described in Section 1.3 of the SIP.

The RPA identifies the observed MEC in the effluent for each pollutant, based on effluent concentration data. There are three triggers in determining Reasonable Potential:

- 1) The first trigger is activated if the MEC is greater than the lowest applicable WQO ( $MEC \geq WQO$ ), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than the adjusted WQO, then that pollutant has reasonable potential, and a WQBEL is required.
- 2) The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO ( $B > WQO$ ) and the pollutant was detected in any of the effluent samples.
- 3) The third trigger is activated if a review of other information determines that a WQBEL is required to protect beneficial uses, even though both MEC and B are less than the WQO/WQC. A limitation may be required under certain circumstances to protect beneficial uses.

**c. Effluent Data**

The Regional Water Board's August 6, 2001 letter titled *Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy* (hereinafter referred to as the Regional Water Board's August 6, 2001 Letter) to all permittees, formally required the Dischargers (pursuant to Section 13267 of the CWC) to initiate or continue to monitor for the priority pollutants using analytical methods that provide the best detection limits reasonably feasible. Regional Water Board staff analyzed this effluent data and the nature of Hayward Marsh to determine if the discharge has Reasonable Potential. The RPA was based on the effluent monitoring data collected by the Dischargers from April 2000 through August 2005 for metals and February 2002 through August 2005 for all other priority toxic pollutants.

**d. Ambient Background Data**

Ambient background values are used in the reasonable potential analysis (RPA) and in the calculation of effluent limitations. For the RPA, ambient background concentrations

are the observed maximum detected water column concentrations. The SIP states that for calculating WQBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for criteria/objectives intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations. The RMP station at Yerba Buena Island, located in the Central Bay, has been sampled for most of the inorganic (CTR constituent numbers 1–15) and some of the organic (CTR constituent numbers 16–126) toxic pollutants. Not all the constituents listed in the CTR were analyzed by the RMP during this time.

These data gaps are addressed by the Board's August 6, 2001 Letter titled "Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy" (hereinafter referred to as the Board's August 6, 2001 Letter—available online; see Standard Language and Other References Available Online, below). The Board's August 6, 2001 Letter formally requires the Dischargers (pursuant to Section 13267 of the California Water Code) to conduct ambient background monitoring and effluent monitoring for those constituents not currently sampled by the RMP and to provide this technical information to the Board.

On May 15, 2003, a group of several San Francisco Bay Region Dischargers (known as the Bay Area Clean Water Agencies, or BACWA) submitted a collaborative receiving water study, entitled the *San Francisco Bay Ambient Water Monitoring Interim Report*. This study includes monitoring results from sampling events in 2002 and 2003 for the remaining priority pollutants not monitored by the RMP. The RPA was conducted and the WQBELs were calculated using RMP data from 1993 through 2003 for inorganics and organics at the Yerba Buena Island RMP station, and additional data from the BACWA *Ambient Water Monitoring: Final CTR Sampling Update Report* for the Yerba Buena Island RMP station. The Dischargers may utilize the receiving water study provided by BACWA to fulfill all requirements of the August 6, 2001 letter for receiving water monitoring in this Order.

### e. RPA Determination

The MECs, WQOs/WQC, bases for the WQOs/WQC, background concentrations used, and Reasonable Potential conclusions from the RPA are listed in the following table for all constituents analyzed. Some of the constituents in the CTR were not determined because of the lack of an objective/criteria or effluent data. Based on the RPA methodology in the SIP, some constituents did not demonstrate Reasonable Potential. The RPA results are shown below and Appendix A of this Fact Sheet. The pollutants that exhibit Reasonable Potential are copper, mercury, nickel, cyanide, 4,4'-DDD, heptachlor, and heptachlor epoxide.

CTR #	Priority Pollutants	MEC or Minimum DL <sup>[a][b]</sup> (µg/L)	Governing WQO/WQC (µg/L) <sup>[d]</sup>	Maximum Background or Minimum DL <sup>[a][b]</sup> (µg/L)	RPA Results <sup>[c]</sup>
1	Antimony	4.4	4300	Not Available	Cannot Determine
2	Arsenic	3.9	36	2.46	No
3	Beryllium	0.12	No Criteria	Not Available	---
4	Cadmium	0.16	7.3	0.13	No
5a	Chromium (III)	Not Available	644	Not Available	Cannot Determine
5b	Chromium (VI)	5.9	11.4	4.4	No
6	Copper	7.715	5.1	2.55	Yes
7	Lead	6.75	8.5	0.80	No
8	Mercury	0.03	0.025	0.0086	Yes
9	Nickel	24.5	15.5	3.7	Yes
10	Selenium	0.6	5.0	0.39	No
11	Silver	0.4	2.2	0.052	No
12	Thallium	0.54	6.3	Not Available	Cannot Determine
13	Zinc	59.9	85.6	5.1	No
14	Cyanide	8.8	1.0	<0.40	Yes
15	Asbestos	Not Available	No Criteria	Not Available	---
16	2,3,7,8-TCDD (Dioxin)	<0.0000096	0.000000014	Not Available	Cannot Determine
17	Acrolein	<5	780	<0.50	No
18	Acrylonitrile	<1	0.66	0.030	Cannot Determine
19	Benzene	<0.05	71	<0.050	No
20	Bromoform	<0.1	360	<0.50	No
21	Carbon Tetrachloride	<0.14	4.4	0.060	No
22	Chlorobenzene	<0.05	21000	<0.50	No
23	Chlorodibromomethane	<0.06	34	<0.050	No
24	Chloroethane	<0.19	No Criteria	<0.50	---
25	2-Chloroethylvinyl Ether	<0.1	No Criteria	<0.50	---
26	Chloroform	0.27	No Criteria	<0.50	---
27	Dichlorobromomethane	<0.04	46	<0.050	No
28	1,1-Dichloroethane	<0.07	No Criteria	<0.050	---
29	1,2-Dichloroethane	<0.06	99	0.040	No
30	1,1-Dichloroethylene	<0.05	3.2	<0.50	No
31	1,2-Dichloropropane	<0.12	39	<0.050	No
32	1,3-Dichloropropylene	<0.07	1700	Not Available	Cannot Determine
33	Ethylbenzene	<0.08	29000	<0.50	No
34	Methyl Bromide	0.81	4000	<0.50	No
35	Methyl Chloride	<0.1	No Criteria	<0.50	---
36	Methylene Chloride	0.12	1600	0.50	No
37	1,1,2,2-Tetrachloroethane	<0.11	11	<0.050	No
38	Tetrachloroethylene	<0.11	8.85	<0.050	No
39	Toluene	0.21	200000	<0.30	No
40	1,2-Trans-Dichloroethylene	<0.14	140000	<0.50	No
41	1,1,1-Trichloroethane	<0.08	No Criteria	<0.50	---
42	1,1,2-Trichloroethane	<0.03	42	<0.050	No
43	Trichloroethylene	0.14	81	<0.50	No
44	Vinyl Chloride	<0.07	525	<0.50	No

CTR #	Priority Pollutants	MEC or Minimum DL <sup>[a][b]</sup> (µg/L)	Governing WQO/WQC (µg/L) <sup>[d]</sup>	Maximum Background or Minimum DL <sup>[a][b]</sup> (µg/L)	RPA Results <sup>[c]</sup>
45	2-Chlorophenol	<0.19	400	<1.2	No
46	2,4-Dichlorophenol	<0.29	790	<1.3	No
47	2,4-Dimethylphenol	<0.19	2300	<1.3	No
48	2-Methyl-4,6-Dinitrophenol	<0.95	765	<1.2	No
49	2,4-Dinitrophenol	<0.95	14000	<0.70	No
50	2-Nitrophenol	<0.095	No Criteria	<1.3	---
51	4-Nitrophenol	<1.9	No Criteria	<1.6	---
52	3-Methyl-4-Chlorophenol	<0.19	No Criteria	<1.1	---
53	Pentachlorophenol	<1.9	7.9	<1.0	No
54	Phenol	0.23	4600000	<1.3	No
55	2,4,6-Trichlorophenol	<0.095	6.5	<1.3	No
56	Acenaphthene	<0.046	2700	0.0015	No
57	Acenaphthylene	<0.062	No Criteria	0.00053	---
58	Anthracene	<0.0034	110000	0.00050	No
59	Benzidine	<4.8	0.00054	<0.0015	Cannot Determine
60	Benzo(a)Anthracene	<0.0058	0.049	0.0053	No
61	Benzo(a)Pyrene	<0.0079	0.049	0.0015	No
62	Benzo(b)Fluoranthene	<0.0079	0.049	0.0046	No
63	Benzo(ghi)Perylene	0.02	No Criteria	0.0027	---
64	Benzo(k)Fluoranthene	<0.041	0.049	0.0015	No
65	Bis(2-Chloroethoxy)Methane	<0.095	No Criteria	<0.30	---
66	Bis(2-Chloroethyl)Ether	<0.19	1.4	<0.30	No
67	Bis(2-Chloroisopropyl)Ether	<0.095	170000	Not Available	Cannot Determine
68	Bis(2-Ethylhexyl)Phthalate	1.8	5.9	0.00015	No
69	4-Bromophenyl Phenyl Ether	<0.095	No Criteria	<0.23	---
70	Butylbenzyl Phthalate	0.51	5200	0.00025	No
71	2-Chloronaphthalene	<0.19	4300	<0.30	No
72	4-Chlorophenyl Phenyl Ether	<0.19	No Criteria	<0.30	---
73	Chrysene	<0.0036	0.049	0.0024	No
74	Dibenzo(a,h)Anthracene	<0.0054	0.049	0.00064	No
75	1,2 Dichlorobenzene	<0.05	17000	<0.30	No
76	1,3 Dichlorobenzene	<0.06	2600	<0.30	No
77	1,4 Dichlorobenzene	0.18	2600	<0.30	No
78	3,3-Dichlorobenzidine	<0.095	0.077	<0.0010	Cannot Determine
79	Diethyl Phthalate	1.6	120000	<0.24	No
80	Dimethyl Phthalate	<0.095	2900000	<0.24	No
81	Di-n-Butyl Phthalate	0.69	12000	0.00012	No
82	2,4-Dinitrotoluene	<0.095	9.1	<0.27	No
83	2,6-Dinitrotoluene	<0.19	No Criteria	<0.29	---
84	Di-n-Octyl Phthalate	<0.095	No Criteria	<0.38	---
85	1,2-Diphenylhydrazine	Not Available	0.54	Not Available	Cannot Determine
86	Fluoranthene	<0.009	370	0.011	No
87	Fluorene	<0.0073	14000	0.0021	No
88	Hexachlorobenzene	<0.0015	0.00077	0.000022	Cannot Determine
89	Hexachlorobutadiene	<0.38	50	<0.30	No
90	Hexachlorocyclopentadiene	<0.95	17000	<0.31	No
91	Hexachloroethane	<0.38	8.9	<0.20	No
92	Indeno(1,2,3-cd) Pyrene	<0.0045	0.049	0.0040	No
93	Isophorone	0.14	600	<0.30	No
94	Naphthalene	<0.037	No Criteria	0.0023	---
95	Nitrobenzene	<0.095	1900	<0.25	No
96	N-Nitrosodimethylamine	<0.19	8.1	<0.30	No
97	N-Nitrosodi-n-Propylamine	<0.095	1.4	<0.0010	No
98	N-Nitrosodiphenylamine	<0.095	16	<0.19	No



CTR #	Priority Pollutants	MEC or Minimum DL <sup>[a][b]</sup> (µg/L)	Governing WQO/WQC (µg/L) <sup>[d]</sup>	Maximum Background or Minimum DL <sup>[a][b]</sup> (µg/L)	RPA Results <sup>[c]</sup>
99	Phenanthrene	<0.0063	No Criteria	0.0061	---
100	Pyrene	<0.0027	11000	0.019	No
101	1,2,4-Trichlorobenzene	<0.29	No Criteria	<0.30	---
102	Aldrin	<0.0018	0.00014	0.00000014	Cannot Determine
103	alpha-BHC	<0.0061	0.013	0.00050	No
104	beta-BHC	<0.001	0.046	0.00041	No
105	Gamma-BHC	<0.0031	0.063	0.00040	No
106	delta-BHC	<0.00064	No Criteria	0.000053	---
107	Chlordane	<0.014	0.00059	0.00018	Cannot Determine
108	4,4'-DDT	<0.0013	0.00059	0.00017	Cannot Determine
109	4,4'-DDE	<0.00097	0.00059	0.00069	Cannot Determine
110	4,4'-DDD	0.0019	0.00084	0.00031	Yes
111	Dieldrin	<0.00077	0.00014	0.00026	Cannot Determine
112	alpha-Endosulfan	<0.00067	0.0087	0.000050	No
113	beta-Endosulfan	0.0028	0.0087	0.000069	No
114	Endosulfan Sulfate	0.0038	240	0.000082	No
115	Endrin	<0.00063	0.0023	0.000050	No
116	Endrin Aldehyde	<0.00042	0.81	Not Available	Cannot Determine
117	Heptachlor	0.004	0.00021	0.000050	Yes
118	Heptachlor Epoxide	0.0036	0.00011	0.000094	Yes
119-125	PCBs (sum)	<0.02	0.00017	Not Available	Cannot Determine
126	Toxaphene	<0.072	0.00020	<0.000050	Cannot Determine
	Total PAHs	0.02	15	0.020	No
	Tributyltin	<0.0046	0.0050	<0.0010	No

[a] The Maximum Effluent Concentration (MEC) or maximum background concentration is the actual detected concentration unless there is a "<" sign before it, in which case the value shown is the minimum detection level.

[b] The MEC or maximum background concentration is "Not Available" when there are no monitoring data for the constituent.

[c] RPA Results = Yes, if MEC > WQO/WQC, or B > WQO/WQC and MEC is detected;  
= No, if MEC and B are < WQO/WQC or if all effluent data are undetected below the lowest criterion or objective;  
= Blank, if no criteria have been promulgated;  
= Cannot Determine, if there are insufficient data, or if the effluent data are undetected at levels above the lowest criterion or objective.

[d] The minimum hardness value from Basins 3A and 3B was 4,810 mg/L. Therefore, in accordance with the California Toxics Rule a hardness value of 400 mg/L was used in calculating WQO/WQC for certain metals.

**1) Constituents with limited data.** The Dischargers have performed sampling and analysis for the constituents listed in the CTR. This data set was used to perform the RPA. In some cases, Reasonable Potential cannot be determined because effluent data are limited, or ambient background concentrations are not available. The Dischargers will continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further RPA will be conducted to determine whether to add numeric effluent limitations to this Order or to continue monitoring.

**2) Pollutants with no Reasonable Potential.** WQBELs are not included in this Order for constituents that do not demonstrate Reasonable Potential; however, monitoring for those pollutants is still required. If concentrations of these constituents are found to have increased significantly, the Dischargers will be required to investigate the source(s) of the

increase(s). Remedial measures are required if the increases pose a threat to water quality in the receiving water.

#### 4. WQBEL Calculations.

WQBELs were developed for the toxic and priority pollutants that were determined to have reasonable potential to cause or contribute to exceedances of the WQOs or WQC. The WQBELs were calculated based on appropriate WQOs/WQC and the appropriate procedures specified in Section 1.4 of the SIP. The WQOs or WQC used for each pollutant with Reasonable Potential is discussed below.

##### a. Copper

- i. *Copper WQC.* The saltwater criteria for dissolved copper in the CTR are 3.1 µg/L for chronic aquatic life protection and 4.8 µg/L for acute aquatic life protection. Included in the CTR are translator values to convert the dissolved criteria to total criteria. The Dischargers may also perform a translator study to determine a more site-specific translator. The SIP, Section 1.4.1, and the June 1996 USEPA guidance document, entitled *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion*, describe this process and provide guidance on how to establish a site-specific translator. Using the Dischargers' site-specific translator, translated criteria of 5.2 µg/L for chronic protection, and 5.1 µg/L for acute protection were used to calculate effluent limitations.
- ii. *RPA Results.* This Order establishes effluent limitations for copper because the 7.7 µg/L MEC exceeds the governing WQC of 5.1 µg/L, demonstrating reasonable potential by Trigger 1, as defined in a previous finding.
- iii. *Copper WQBELs.* The copper WQBELs calculated according to SIP procedures are 5.1 µg/L as the maximum daily effluent limit (MDEL) and 2.9 µg/L as the average monthly effluent limit (AMEL).
- iv. *Immediate Compliance Infeasible.* The Dischargers' Feasibility Study asserts that the Dischargers cannot immediately comply with these WQBELs for copper. Regional Water Board staff statistically analyzed the Dischargers' effluent monitoring data from April 2000 through August 2005. Based on the analysis, the Board concurs with the Dischargers' assertion of infeasibility to comply with final copper WQBELs.
- v. *Interim Effluent Limits.* Because it is infeasible for the Dischargers to immediately comply with the copper WQBELs, an interim effluent limitation is required. Regional Water Board staff considered the Dischargers' effluent monitoring data from April 2000 through August 2005 to develop an interim limitation. Historically, interim performance-based effluent limits have been referenced to the 99.87<sup>th</sup> percentile value of recent performance data. Statistical analysis of the copper effluent data indicates a 99.87<sup>th</sup> percentile value of 13 µg/L. The previous permit contained an interim effluent limitation of 17 µg/L as a daily average, which is less stringent. Therefore,

the 99.87<sup>th</sup> percentile based on the new performance data, 13 µg/L, is set as the interim limitation, expressed as a daily maximum.

- vi. *Performance and Attainability.* During the period April 2000 through August 2005, the average concentrations were in the range of 3.30 µg/L to 7.72 µg/L (23 samples). All samples were below the interim limit, therefore, it is expected that the Dischargers can comply with the copper interim effluent limitations.
- vii. *Term of Interim Effluent Limitation.* The copper interim effluent limitation shall remain in effect until May 17, 2010, or until the Regional Water Board amends the limitation based on additional data or SSOs.
- viii. *Copper SSO.* During the permit term, the Regional Water Board may amend the copper WQBELs based on the SSO being developed for the San Francisco Bay region.
- ix. *Antibacksliding/Antidegradation.* Antibacksliding and antidegradation requirements are satisfied, since the new Interim Performance Based Limit (IPBL) is more stringent than the previous permit effluent limitation.

**b. Mercury**

- i. *Mercury WQOs/WQC.* Both the Basin Plan and the CTR include objectives and criteria that govern mercury in the receiving water. The Basin Plan specifies objectives for the protection of saltwater chronic aquatic life protection of 0.025 µg/L and 2.1 µg/L for acute aquatic life protection. The CTR specifies a long-term average criterion for protection of human health of 0.051 µg/L.
- ii. *RPA Results.* This Order establishes effluent limitations for mercury because the 0.030 µg/L MEC exceeds the governing WQO of 0.025 µg/L, demonstrating reasonable potential by Trigger 1, as defined in a previous finding.
- iii. *Mercury WQBELs.* The mercury WQBELs calculated according to SIP procedures are 0.042 µg/L for the MDEL and 0.020 µg/L for the AMEL. No dilution credit is allowed in calculating WQBELs for mercury.
- iv. *Immediate Compliance Infeasible.* The Dischargers' Feasibility Study asserts that the Dischargers cannot immediately comply with these WQBELs for mercury. Regional Water Board staff statistically analyzed the Dischargers' effluent monitoring data from April 2000 through August 2005. Based on the analysis, the Board concurs with the Dischargers' assertion of infeasibility to comply with final mercury WQBELs.
- v. *Mercury Control Strategy.* The Regional Water Board is developing a TMDL to control mercury levels in the San Francisco Bay region. The Regional Water Board, together with other stakeholders, will cooperatively develop source control strategies as part of the TMDL development. Municipal discharge point sources do not

represent a significant mercury loading to San Francisco Bay. Therefore, the currently preferred strategy is to apply interim mass loading limits to point source discharges while focusing mass reduction efforts on other more significant and controllable sources.

While the TMDL is being developed, the Dischargers will cooperate in maintaining ambient receiving water conditions by complying with performance-based mercury mass emission limits. Therefore, this Order includes interim mass loading effluent limitations for mercury, as described in the findings below. The Dischargers are required to implement source control measures and cooperatively participate in special studies as described below.

- vi. *Mercury TMDL.* The current 303(d) list includes the San Francisco Bay as impaired by mercury, due to high mercury concentrations in the tissues of fish from the Bay. Methyl mercury, the highly toxic form of mercury, is a persistent bioaccumulative pollutant. There is no evidence to show that mercury discharged is taken out of the hydrologic system, by processes such as evaporation before reaching San Francisco Bay. Absent this evidence, the Regional Water Board assumes that the mercury reaches the Bay through either sediment transport or water flows.

The Regional Water Board intends to establish a TMDL that will lead towards overall reduction of mercury mass loadings into San Francisco Bay. The final mercury effluent limitations will be based on the Dischargers' WLA in the TMDL. While the TMDL is being developed, the Dischargers will comply with performance-based mercury concentration and mass-based limitations to cooperate with maintaining current ambient receiving water conditions.

- vi. *Interim Effluent Limits.* Because it is infeasible for the Dischargers to immediately comply with the mercury WQBELs, an interim effluent limitation is required. An interim limit of 0.087 µg/L as an average monthly limit was determined from pooled ultra-clean mercury data for POTWs throughout the Region using secondary treatment (*Staff Report: Statistical Analysis of Pooled Data from Region-wide Ultra-clean Sampling, 2000*) is established. The previous Order contained an interim effluent limitation of 0.14 µg/L, which is less stringent. Therefore, 0.087 µg/L as an average monthly limit is set as the interim limitation for this Order.
- vii. *Interim Mercury Mass Emission Limit.* In addition to the concentration-based mercury interim effluent limit, this Order establishes an interim mercury mass loading limit of 2.54 kilograms per year (kg/year). This limit is retained from the previous Order. It will maintain current loadings until a TMDL is established and is consistent with state and federal antidegradation and antibacksliding requirements. The final mass-based effluent limitation will be based on the WLA derived from the mercury TMDL for this discharge.
- vii. *Performance and Attainability.* During the period April 2000 through August 2005, the average concentrations were in the range of 0.00178 µg/L to 0.030 µg/L (25

samples). All samples were below the interim limit, therefore, it is expected that the Dischargers can comply with the mercury interim effluent limitations.

- viii. *Term of Interim Effluent Limitation.* The mercury interim concentration limitation shall remain in effect until April 27, 2010, or until the Regional Water Board amends the limitations based on additional data, SSOs, or until the Regional Water Board adopts a TMDL-based effluent limitation for mercury.
- ix. *Antibacksliding/Antidegradation.* Antibacksliding and antidegradation requirements are satisfied since the new IPBL is more stringent than the previous permit effluent limitation and the mass emission effluent limit is unchanged from the previous permit effluent limitation.

**c. Nickel**

- i. *Nickel WQOs.* The saltwater objectives for dissolved nickel in the Basin Plan are 8.2 µg/L for chronic aquatic life protection and 74 µg/L for acute aquatic life protection. Included in the CTR are translator values to convert the dissolved criteria to total criteria. The Dischargers may also perform a translator study to determine a more site-specific translator. The SIP, Section 1.4.1, and the June 1996 USEPA guidance document, entitled *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion*, describe this process and provide guidance on how to establish a site-specific translator. Using the Dischargers' site-specific translator, translated criteria of 15.5 µg/L for chronic protection and 83.7 µg/L for acute protection were used to calculate effluent limitations.
- ii. *RPA Results.* This Order establishes effluent limitations for nickel because the 25 µg/L MEC exceeds the governing WQO of 15.5 µg/L, demonstrating reasonable potential by Trigger 1, as defined in a previous finding.
- iii. *Nickel WQBELs.* The nickel WQBELs calculated according to SIP procedures are 22 µg/L as the maximum daily effluent limit (MDEL) and 14 µg/L as the average monthly effluent limit (AMEL).
- iv. *Immediate Compliance Infeasible.* The Dischargers' Feasibility Study asserts that the Dischargers cannot immediately comply with these WQBELs for nickel. Regional Water Board staff statistically analyzed the Dischargers' effluent monitoring data from April 2000 through August 2005. Based on the analysis, the Board concurs with the Dischargers' assertion of infeasibility to comply with final nickel WQBELs.
- v. *Interim Effluent Limits.* Because it is infeasible for the Dischargers to immediately comply with the nickel WQBELs, an interim effluent limitation is required. Regional Water Board staff considered the Dischargers' effluent monitoring data from April 2000 through August 2005 to develop an interim limitation. Historically, interim performance-based effluent limits have been referenced to the 99.87<sup>th</sup> percentile value

of recent performance data. Statistical analysis of the nickel effluent data indicates a 99.87<sup>th</sup> percentile value of 36 µg/L. The previous permit contained an interim effluent limitation of 43 µg/L as a daily average, which is less stringent. Therefore, the 99.87<sup>th</sup> percentile based on the new performance data, 36 µg/L, is set as the interim limitation, expressed as a daily maximum.

- vi. *Performance and Attainability.* During the period April 2000 through August 2005, the effluent average concentrations were in the range of 5.95 µg/L to 24.5 µg/L (23 samples). All samples were below the interim limit, therefore, it is expected that the Dischargers can comply with the nickel interim effluent limitations.
- vii. *Term of Interim Effluent Limitation.* The nickel interim effluent limitation shall remain in effect until April 27, 2010, or until the Regional Water Board amends the limitation based on additional data or SSOs.
- viii. *Nickel SSO.* During the permit term, the Regional Water Board may amend the nickel WQBELs based on the SSO being developed for the San Francisco Bay region.
- ix. *Antibacksliding/Antidegradation.* Antibacksliding and antidegradation requirements are satisfied since the new IPBL is more stringent than the previous permit effluent limitation.

**d. Cyanide**

- i. *Cyanide WQC.* The NTR includes WQC that govern cyanide for the protection of aquatic life in salt surface waters. The NTR specifies the saltwater Criterion Maximum Concentration (CMC) and Criterion Chronic Concentration (CCC) of 1 µg/L.
- ii. *RPA Results.* This Order establishes effluent limitations for cyanide because the 8.8 µg/L MEC exceeds the governing WQC of 1 µg/L, demonstrating reasonable potential by Trigger 1, as defined in a previous finding.
- iii. *Cyanide WQBELs.* The cyanide WQBELs calculated according to SIP procedures are 1 µg/L as the maximum daily effluent limit (MDEL) and 0.46 µg/L as the average monthly effluent limit (AMEL).
- iv. *Immediate Compliance Infeasible.* The Dischargers' Feasibility Study asserts the Dischargers cannot immediately comply with these WQBELs for cyanide. Regional Water Board staff statistically analyzed the Dischargers' effluent monitoring data from April 2000 through August 2005. Based on the analysis, the Board concurs with the Dischargers' assertion of infeasibility to comply with final cyanide WQBELs.
- v. *Alternative Limit for Cyanide.* As described in *Draft Staff Report on Proposed Site-Specific Water Quality Objectives and Effluent Limit Policy for Cyanide for San Francisco Bay*, dated November 10, 2005, the Regional Water Board is proposing to develop site-specific criteria for cyanide. In this report, the proposed site-specific criteria for marine waters are 2.9 µg/L as a four-day average, and 9.4 µg/L as a one-

hour average. For shallow water dischargers (i.e., Hayward Marsh), this report also recommends using an attenuation factor of 3.5 in calculating final water quality based effluent limits. Based on these assumption, and the Dischargers' current cyanide data (coefficient of variation of 0.722), final water quality based effluent limits for cyanide will be 20 µg/L as a MDEL, and 9.2 µg/L as an AMEL. These alternative limits will become effective only if the site-specific objective adopted for cyanide contains the same assumptions in the staff report, dated November 10, 2005.

- vi. *Interim Effluent Limitation.* Because it is infeasible for the Dischargers to immediately comply with the cyanide WQBELs, an interim effluent limitation is required. Regional Water Board staff considered the Dischargers' effluent monitoring data from April 2000 through August 2005 to develop an interim limitation. Historically, interim performance-based effluent limits have been referenced to the 99.87<sup>th</sup> percentile value of recent performance data. Statistical analysis of the cyanide effluent data indicates a 99.87<sup>th</sup> percentile value of 21 µg/L. The previous permit contained an interim effluent limitation of 17 µg/L as a daily average, which is more stringent. Therefore, the previous permit limit of 17µg/L is set as the interim limitation, expressed as a daily maximum.
- vii. *Performance and Attainability.* During the period April 2000 through August 2005, the average concentrations were in the range of <3 µg/L to 8.8 µg/L (23 samples). All samples were below the previous interim limit, therefore, it is expected that the Dischargers can comply with the cyanide interim effluent limitation.
- viii. *Term of Interim Effluent Limitation.* The cyanide interim effluent limitation shall remain in effect until May 17, 2010, or until the Regional Water Board amends the limitation based on additional data or SSOs.
- ix. *Antibacksliding/Antidegradation.* Antibacksliding and antidegradation requirements are satisfied since the IPBL is the same as in the previous permit effluent limitation.

**e. 4,4'DDD**

- i. *WQC.* The CTR contains a long-term average WQC for 4,4'-DDD of 0.00084 µg/L for protection of human health (organism consumption).
- ii. *RPA Results.* The MEC for 4,4'-DDD is 0.0019 µg/L, which was qualified by the analytical laboratory as a detected but not quantified (DNQ), or estimated, value. The 4,4'-DDD MEC exceeds the governing WQO of 0.00084 µg/L, demonstrating reasonable potential by Trigger 1, as defined in a previous finding.
- iii. *WQBELs.* The 4,4'-DDD WQBELs calculated according to SIP procedures are 0.0017 µg/L for the MDEL and 0.00084 µg/L for the AMEL.
- iv. *Immediate Compliance Infeasible.* The Dischargers' Feasibility Study asserts that the Dischargers cannot immediately comply with these WQBELs for 4,4'-DDD. Based

on the analysis, the Board concurs with the Dischargers' assertion of infeasibility to comply with final 4,4'-DDD WQBELs.

- v. *Term of Interim Effluent Limitation.* The 4,4'-DDD interim effluent limitation shall remain in effect until May 17, 2010.

**f. Heptachlor**

- i. *WQC.* The CTR contains numeric saltwater WQC for heptachlor of 0.0036 µg/L for chronic protection and 0.053 µg/L for acute protection. The CTR also contains a long-term average WQC of 0.00021 µg/L for protection of human health.
- ii. *RPA Results.* The MEC for heptachlor is 0.0040 µg/L, which was qualified by the analytical laboratory as a detected but not quantified (DNQ), or estimated, value. The heptachlor MEC exceeds the governing WQC of 0.00021 µg/L, demonstrating reasonable potential by Trigger 1, as defined in a previous finding.
- iii. *WQBELs.* The heptachlor WQBELs calculated according to SIP procedures are 0.00042 µg/L for the MDEL and 0.00021 µg/L for the AMEL.
- iv. *Immediate Compliance Infeasible.* The Dischargers' Feasibility Study asserts that the Dischargers cannot immediately comply with these WQBELs for Heptachlor. Based on the analysis, the Board concurs with the Dischargers' assertion of infeasibility to comply with final Heptachlor WQBELs.
- v. *Term of Interim Effluent Limitation.* The Heptachlor interim effluent limitation shall remain in effect until May 17, 2010.

**g. Heptachlor Epoxide**

- i. *WQOs.* The CTR contains numeric saltwater WQOs for heptachlor epoxide of 0.0036 µg/L for chronic protection and 0.053 µg/L for acute protection. The CTR also contains a long-term average WQO of 0.00011 µg/L for protection of human health.
- ii. *RPA Results.* The MEC for heptachlor epoxide is 0.0036 µg/L, which was qualified by the analytical laboratory as a detected but not quantified (DNQ), or estimated, value. The heptachlor epoxide MEC exceeds the governing WQO of 0.00011 µg/L, demonstrating reasonable potential by Trigger 1, as defined in a previous finding.
- iii. *WQBELs.* The Heptachlor Epoxide WQBELs calculated according to SIP procedures are 0.00022 µg/L for the MDEL and 0.00011 µg/L for the AMEL.
- iv. *Immediate Compliance Feasible.* The Dischargers' Feasibility Study asserts that the Dischargers cannot immediately comply with these WQBELs for Heptachlor Epoxide. Based on the analysis, the Board concurs with the Dischargers' assertion of infeasibility to comply with final Heptachlor Epoxide WQBELs.



- v. *Term of Interim Effluent Limitation.* The Heptachlor Epoxide interim effluent limitation shall remain in effect until May 17, 2010.

## h. Effluent Limit Calculations

PRIORITY POLLUTANTS	Copper	Mercury	Nickel	Cyanide
Basis and Criteria type	CTR SW Chronic	Basin Plan SW	CTR SW Chronic	CTR SW Acute
Lowest WQO	3.1	0.025	8.2	1.0
Acute Translator	0.940	---	0.884	---
Chronic Translator	0.599		0.527	
Dilution Factor (D) (if applicable)	0	0	0	0
no. of samples per month	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y
HH criteria analysis required? (Y/N)	N	Y	Y	Y
Applicable Acute WQO	5.1	2.1	84	1.0
Applicable Chronic WQO	5.2	0.025	15.5	1.0
HH criteria	---	0.051	4600	220000
Background (max conc for Aquatic Life calc)	2.5	0.0086	3.7	0.40
Background (avg conc for HH calc)	1.8	0.0039	2.3	0.76
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	Y	N	N
ECA acute	5.1	2.1	84	1.0
ECA chronic	5.2	0.025	15.5	1.0
ECA HH	---	0.051	4600	220000
No. of data points <10 or at least 80% of data reported non-detect? (Y/N)	N	N	N	N
Average of data	4.1	0.010	12	2.6
Standard Deviation	1.8	0.0067	4.7	1.9
CV calculated	0.439	0.650	0.382	0.722
CV (Selected) - Final	0.439	0.650	0.382	0.722
ECA acute mult99	0.411	0.300	0.454	0.273
ECA chronic mult99	0.618	0.503	0.655	0.471
LTA acute	2.10	0.63	38.1	0.27
LTA chronic	3.21	0.013	10.15	0.47
minimum of LTAs	2.10	0.013	10.15	0.27
AMEL mult95	1.40	1.60	1.34	1.67
MDEL mult99	2.43	3.33	2.20	3.66
AMEL (aq life)	2.9	0.020	14	0.46
MDEL(aq life)	5.1	0.042	22	1.00
MDEL/AMEL Multiplier	---	2.08	1.64	2.19
AMEL (human hlth)	---	0.051	4600	220000
MDEL (human hlth)	---	0.11	7561	481067
minimum of AMEL for Aq. life vs HH	2.9	0.020	14	0.46
minimum of MDEL for Aq. Life vs HH	5.1	0.042	22	1.00
Current limit in permit (30-d avg)	N/A	N/A	N/A	N/A
Current limits in permit (daily average)	17	0.14	43	17.1
Final limit - AMEL	2.9	0.020	14	0.46
Final limit - MDEL	5.1	0.042	22	1.0
Max Effl Conc (MEC), 2000-2004	7.7	0.030	25	8.8

PRIORITY POLLUTANTS	4,4'-DDD	Heptachlor	Heptachlor Epoxide
Basis and Criteria type	CTR HH	CTR HH	CTR HH
Lowest WQO	0.00084	0.00021	0.00011
Translators	---	---	---
Dilution Factor (D) (if applicable)	0	0	0
no. of samples per month	4	4	4
Aquatic life criteria analysis required? (Y/N)	N	Y	Y
HH criteria analysis required? (Y/N)	Y	Y	Y
Applicable Acute WQO	---	0.053	0.053
Applicable Chronic WQO	---	0.0036	0.0036
HH criteria	0.00084	0.00021	0.00011
Background (max conc for Aquatic Life calc)	0.00031	0.000050	0.000094
Background (avg conc for HH calc)	0.00011	1.1E-05	2.7E-05
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	Y	Y	Y
ECA acute	---	0.053	0.053
ECA chronic	---	0.0036	0.0036
ECA HH	0.00084	0.00021	0.00011
No. of data points <10 or at least 80% of data reported non-detect? (Y/N)	Y	Y	Y
Average of data	0.00076	0.0011	0.0013
Standard Deviation	0.00070	0.0013	0.0012
CV calculated	0.918	1.22	0.912
CV (Selected) - Final	0.60	0.60	0.60
ECA acute mult99	0.321	0.321	0.321
ECA chronic mult99	0.527	0.527	0.527
LTA acute	---	0.017	0.017
LTA chronic	---	0.0019	0.0019
minimum of LTAs	---	0.0019	0.0019
AMEL mult95	1.55	1.55	1.55
MDEL mult99	3.11	3.11	3.11
AMEL (aq life)	---	0.0029	0.0029
MDEL(aq life)	---	0.0059	0.0059
MDEL/AMEL Multiplier	2.01	2.01	2.01
AMEL (human hlth)	0.00084	0.00021	0.00011
MDEL (human hlth)	0.0017	0.00042	0.00022
minimum of AMEL for Aq. life vs HH	0.00084	0.00021	0.00011
minimum of MDEL for Aq. Life vs HH	0.0017	0.00042	0.00022
Current limit in permit (30-d avg)	N/A	N/A	N/A
Current limits in permit (daily)	N/A	N/A	N/A
Final limit - AMEL	0.00084	0.00021	0.00011
Final limit - MDEL	0.0017	0.00042	0.00022
Max Effl Conc (MEC), 2000-2004	0.0019	0.0040	0.0036

## 5. Whole Effluent Toxicity (WET)

The Basin Plan requires dischargers to either conduct flow-through effluent toxicity tests or perform static renewal bioassays (Chapter 4, Acute Toxicity) to measure the toxicity of wastewaters and to assess negative impacts upon water quality and beneficial uses caused by the aggregate toxic effect of the discharge of pollutants. Since USD does not alter reclaimed wastewater once it enters the pond and the toxicity of the effluent is already being tested through the discharge to the EBDA outfall, USD is already fulfilling this requirement. Therefore, this Order does not require routine WET testing.

## D. Numeric Effluent Limitations

**Table F- 9. Summary of Water Quality Based Effluent Limitations for Avg. 2AE/2BE**

Parameter	Units	Final Effluent Limits		Interim Effluent Limits	
		Daily Maximum (MDEL)	Monthly Average (AMEL)	Daily Maximum	Monthly Average
Copper <sup>(2)</sup>	µg/L	5.1	2.9	13	---
Mercury <sup>(1)</sup>	µg/L	---	---	---	0.087
Nickel <sup>(2)</sup>	µg/L	22	14	36	---
Cyanide <sup>(2)</sup>	µg/L	1.0	0.46	17	---
4,4'-DDD	µg/L	0.0017	0.00084	0.05	
Heptachlor	µg/L	0.00042	0.00021	0.01	
Heptachlor Epoxide	µg/L	0.00022	0.00011	0.01	

<sup>(1)</sup> The Regional Water Board may amend the limitation based on the Waste Load Allocations in the Total Maximum Daily Loads.

<sup>(2)</sup> The Regional Water Board may amend the limitation based on the Site Specific Objectives for this parameter, provided such amendment complies with anti-backsliding and antidegradation.

As indicated earlier in the Fact Sheet, the derivation of net environmental benefit associated with this project is from the creation of wetlands in Basins 3A and 3B. The remaining portions of the marsh are used for treatment. As such, the compliance point for toxic pollutants (Table F-7) is at the point where reclaimed wastewater is routed from treatment wetlands to waters of the State (i.e., from Basins 2A and 2B to Basin 3A).

Earlier in the Fact Sheet, the compliance point for conventional pollutants (Table F-6) is indicated as at the point where reclaimed wastewater enters the marsh system (Basin 1), with the exception of chlorine residual which is evaluated after Basin 1. The reason that compliance for these pollutants is evaluated before marsh treatment is to ensure that Union Sanitary District is providing Hayward Marsh with adequately treated wastewater.

## V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Receiving Water Limitations V.A. (conditions to be maintained): These limitations are in the existing permit and are based on water quality objectives for physical, chemical, and biological characteristics from Chapter 3 of the Basin Plan.

- B. Receiving Water Limitation V.B. (special limitations): This limitation is in the existing permit, requires compliance with Federal and State law, and is self-explanatory.
- C. Receiving Water Limitation V.C. (compliance with State law): Self-explanatory.

## **VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS (Provision B)**

The principal purposes of a monitoring program by a discharger are to:

- 1) Document compliance with waste discharge requirements and prohibitions established by the Regional Water Board,
- 2) Facilitate self-policing by the discharger in the prevention and abatement of pollution arising from waste discharge,
- 3) Develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and to
- 4) Prepare water and wastewater quality inventories.

Section 122.48 of 40 CFR requires all NPDES permits to specify recording and reporting of monitoring results. Sections 13267 and 13383 of the California Water Code authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement Federal and State requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for the Hayward Marsh.

The MRP is a standard requirement in almost all NPDES permits issued by the Regional Water Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Regional Water Board's policies. The MRP also contains a sampling program specific for Hayward Marsh. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs for them.

### **A. Influent Monitoring**

The MRP includes monitoring at E-1 for conventional and toxic pollutants. This Order requires daily flow monitoring and weekly monitoring for BOD, total suspended solids, fecal coliform, dissolved oxygen, sulfides and temperature (which is unchanged from the previous permit) to facilitate self-policing for the prevention and abatement of potential pollution arising in the effluent discharge. This Order also requires monthly monitoring of hardness, pH, ammonia nitrogen, nitrate nitrogen, total phosphorus, salinity and un-ionized ammonia. The sampling frequencies for these constituents were modified from twice per month to monthly since the Dischargers have collected a significant amount of baseline data and are now more in the process of collecting data to monitor the discharge and Marsh for long term trends. This Order also requires annual monitoring for 4,4'DDD, heptachlor, and heptachlor epoxide; and quarterly monitoring for copper, mercury, nickel and cyanide. The sampling frequencies were modified from monthly to quarterly, which is consistent with MRPs that have been adopted for other Region 2 minor dischargers.

### **B. Marsh Waters Monitoring**

The MRP includes monitoring at E-1-D, C-2A, C-2B, C-3A, and C-3B for conventional pollutants. This Order requires daily monitoring of chlorine residual and monthly monitoring of dissolved oxygen, sulfides, pH, ammonia nitrogen, nitrate nitrogen, total phosphorus, temperature, salinity and un-ionized ammonia. The sampling frequencies for these constituents were modified to monthly since the Dischargers have collected a significant amount of baseline data and are now more in the process of collecting data to monitor the discharge and Marsh for long term trends.

The MRP includes monitoring at 2AE/2BE for conventional and toxic pollutants. This Order requires monthly monitoring of pH, ammonia nitrogen, nitrate nitrogen, total phosphorus, salinity and un-ionized ammonia. The sampling frequencies for these constituents were modified from twice per month to monthly since the Dischargers have collected a significant amount of baseline data and are now more in the process of collecting data to monitor the discharge and Marsh for long term trends. This Order also requires quarterly monitoring for copper, mercury, nickel and cyanide; and annual monitoring for 4,4'-DDD, heptachlor, and heptachlor epoxide.

### **C. Effluent Monitoring**

The MRP includes monitoring at E-2 and E-3 for conventional pollutants. This Order requires monthly monitoring of dissolved oxygen, sulfides, pH, ammonia nitrogen, nitrate nitrogen, total phosphorus, salinity and un-ionized ammonia. The sampling frequencies for these constituents were modified from twice per month to monthly since the Dischargers have collected a significant amount of baseline data and are now more in the process of collecting data to monitor the discharge and Marsh for long term trends.

### **D. Receiving Water Monitoring**

The MRP includes monthly monitoring at C-R and C-R-B for dissolved oxygen, sulfides and pH. The monitoring requirements are unchanged from the previous permit.

## **VII. RATIONALE FOR PROVISIONS**

### **A. Standard Provisions (Provision A).**

Standard Provisions, which in accordance with 40 CFR §§122.41 and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachments D and G of this Order.

### **B. Special Provisions (Provision C).**

#### **1. Reopener Provisions.**

These provisions are based on 40 CFR 123 and allow future modification of this Order and its effluent limitations as necessary in response to updated WQOs that may be established in the future.

#### **2. Permit Compliance and Rescission of Previous Waste Discharge Requirements.**

Time of compliance is based on 40 CFR 122. The basis of this Order superseding and rescinding the previous permit is based on 40 CFR 122.46.

**3. Effluent Characterization Study.**

This Order does not include effluent limitations for the selected constituents addressed in the August 6, 2001 Letter that do not demonstrate Reasonable Potential, but this provision requires the Dischargers to continue monitoring for these pollutants as described in the August 6, 2001 Letter and as specified in the MRP of this Order. If concentrations of these constituents increase significantly, the Dischargers will be required to investigate the source of the increases and establish remedial measures, if the increases result in reasonable potential to cause or contribute to an excursion above the applicable WQO/WQC. This provision is based on the Basin Plan and the SIP.

**4. Ambient Background Receiving Water Study.**

This provision is based on the Basin Plan, the SIP, and the August 6, 2001 Letter for priority pollutant monitoring. As indicated in the permit, this requirement may be met by participating in the collaborative BACWA study.

**5. Pollution Prevention and Pollutant Minimization Program.**

This provision is based on Chapter 4 of the Basin Plan and Section 2.1 of the SIP.

**6. Optional Mass Offset.**

This option is provided to encourage the Dischargers to further implement aggressive reduction of mass loads to the Lower San Francisco Bay.

**7. Sewer System Management Plan.**

This provision requires the Dischargers to actively participate in the BACWA and Regional Water Board collaborative effort to address SSOs. The effort is consistent with Board Resolution No. R2-2003-0095.

**8. Marsh Operation.**

This provision is based on the previous permit and the need to operate the marsh in a way that preserves the wildlife habitat.

**9. Marsh Management Plan.**

This provision requires the Dischargers to document how it will meet water quality objectives for unionized ammonia in Basins 3A and 3B, and ensure that dissolved oxygen levels are not adversely affecting aquatic life. This is because data in Basins 3A and 3B indicate that unionized ammonia has the potential to adversely affect aquatic life, and that dissolved oxygen may exhibit significant diurnal swings (while the Dischargers only collect grab samples for dissolved oxygen, some of these samples exhibit supersaturation, which could be caused by excessive algal growth, and therefore, lead to a crash in dissolved oxygen levels in the early morning hours). Additionally, this provision requires the Dischargers to implement, review, and update their Marsh Management Plan, and to notify the Regional Water Board of any modifications to this plan.

**10. Marsh Contingency Plan.**

This provision requires the Dischargers to implement, review, and update their Marsh Contingency Plan, and to notify the Regional Water Board staff of any modifications to this plan. This provision is unchanged from the previous permit and is based on the Basin Plan.



**11. Primary Responsibility for Operation.**

The purpose of this provision is to specify the roles of the permittees for various aspects of marsh operation.

**12. Actions for Compliance Schedule Pollutants**

Consistent with the SIP, the Dischargers shall participate in the development of region-wide TMDL or SSO studies. By January 31 of each year, the Dischargers shall submit an update to the Regional Water Board to document progress made on source control and pollutant minimization measures and development of TMDL or SSO. Regional Water Board staff shall review the status of TMDL development. This Order may be reopened in the future to reflect any changes required by TMDL development.

**13. Alternative Compliance.**

Since the Union Sanitary District has provided reclaimed wastewater to the Hayward Marsh on a voluntary basis in order to provide environmental benefit and enhance wildlife habitat, the District desires to retain the ability to discharge its treated wastewater through the EBDA outfall, if compliance with final limits is not achievable in this permit for the Hayward Marsh.

**14. Bacteriological Monitoring Study**

The purpose of this provision is to confirm that the effluent limits for fecal coliform are protective of beneficial uses in lower San Francisco Bay.

**15. Use Attainability Analysis for Basins 3A and 3B**

The purpose of this provision is to enable the Water Board to designate beneficial uses for Hayward Marsh in a future Basin Plan amendment.

**VIII. PUBLIC PARTICIPATION**

The San Francisco Bay Regional Water Board is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for Hayward Shoreline Marsh (Hayward Marsh). As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

**A. Notification of Interested Parties.**

The Regional Water Board has notified the Dischargers and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the following: (a) paper and electronic copies of this Order were relayed to the Dischargers, and (b) the Valley Times published a notice that this item would appear before the Board on May 10, 2006.

**B. Written Comments.**

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should be submitted either in person or by mail to

the Executive Office at the Regional Water Board at the address above on the cover page of this Order, Attention Mr. Robert Schlipf.

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices **by 5:00 p.m. on April 13, 2006.**

### **C. Public Hearing**

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: May 10, 2006  
Time: 9:00 am  
Location: Elihu Harris State Office Building  
1515 Clay Street, 1<sup>st</sup> Floor Auditorium  
Oakland, CA 94612  
Contact: Robert Schlipf, (510) 622-2478, [rschlipf@waterboards.ca.gov](mailto:rschlipf@waterboards.ca.gov)

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is [www.waterboards.ca.gov/rwqcb2](http://www.waterboards.ca.gov/rwqcb2) where you can access the current agenda for changes in dates and locations.

### **D. Waste Discharge Requirements Petitions**

Any aggrieved person may petition the State Water Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

State Water Resources Control Board  
Office of Chief Counsel  
P.O. Box 100, 1001 I Street  
Sacramento, CA 95812-0100

### **E. Information and Copying.**

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m. except from noon to 1:00 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (510) 622-2300.

**F. Register of Interested Persons.**

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference this facility, and provide a name, address, and phone number.

**G. Additional Information**

Requests for additional information or questions regarding this Order should be directed to Robert Schlipf, 510-622-2478, [rschlipf@waterboards.ca.gov](mailto:rschlipf@waterboards.ca.gov).